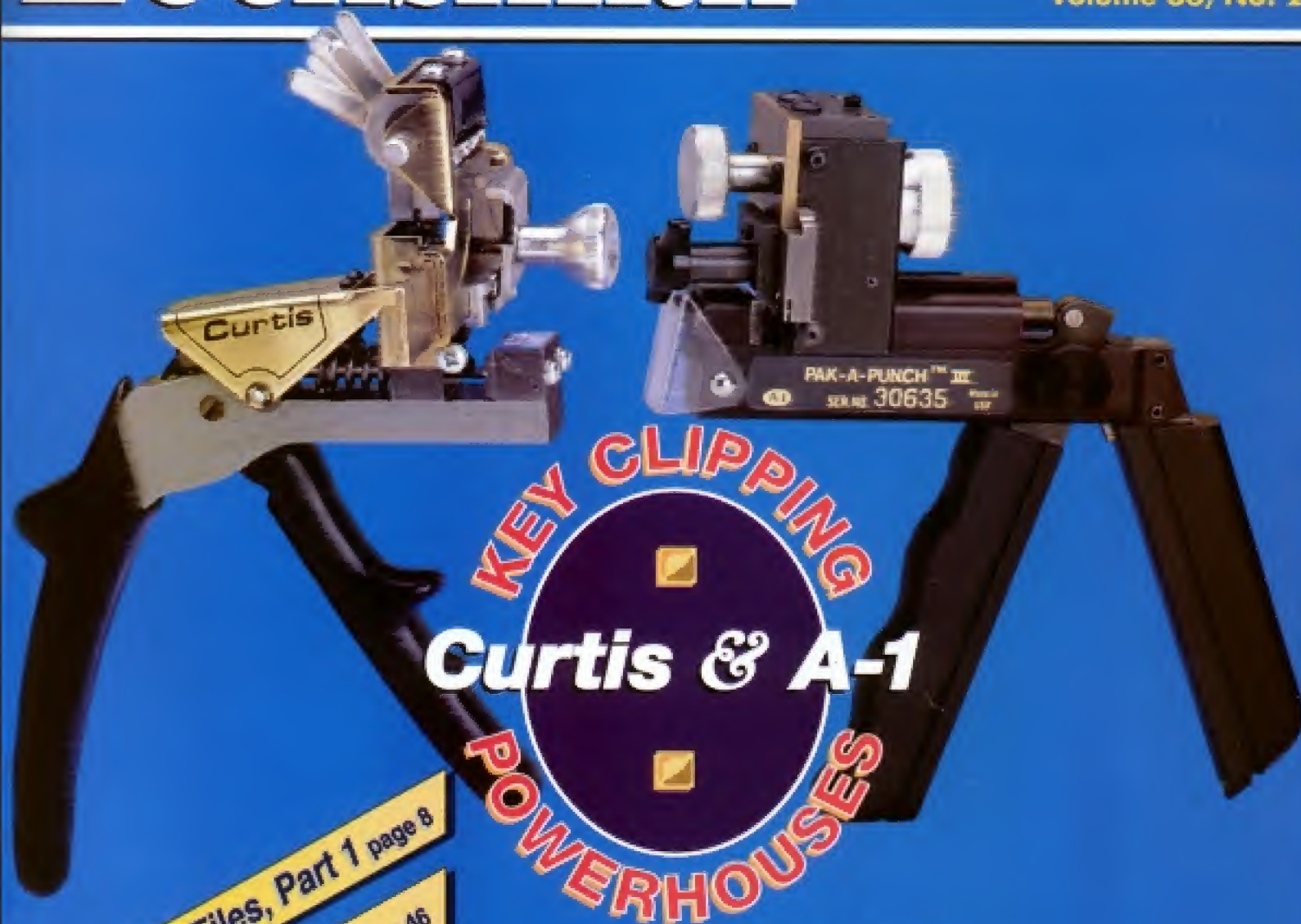


# The National Locksmith®

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**CODES  
MILLENNIA**  
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February 1995  
Volume 66, No. 2



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Mini-Section ADA

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### On The Cover

Two key clipping powerhouses take the field – the well known Curtis Model 15 and newcomer A-1 Security Mfg. Pak-A-Punch.

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# COMMENTARY

## Have a computer? Talk to The National Locksmith Online!

As I stated last month, *The National Locksmith* now has an account with America Online. This means that you can E-mail us if you have AOL or any online service. If you have a computer and a modem, you're in business!

Simply write and tell us your AOL or Internet address and we'll add you to our electronic address book for hot new locksmiths flashes and online forums. You must also give us your subscriber number. That number appears on your magazine label and starts with the characters "1P."

If you had already sent me your E-mail address, then you would already know about the changes being made to Saturn locks! That's because as soon as we got the information, we sent it to our address book. Read all about it in Bits & Pieces this month, on page 113.

Once you're online, you can send us letters to the editor, technitips, and ad information requests right from the comfort of your own computer. Plus, we can send you news as we receive it. Other magazines are just complaining about the Internet. We're using it to help you!

If you want my opinion on which online service to sign up for, I would recommend America Online. The service is very economical. Call them at (800) 827-6364 for a free 10 hour trial. And, no, I'm not on commission!



**Marc Goldberg**  
Editor/Publisher

for you to remove it from the magazine and copy it. You should give this two pages of information to any of your customers when they question you on ADA related matters.

The article explains to your customer who the law applies to. It talks about the hardware requirements of the ADA. And, lastly, it tells about the penalties for not complying. So instead of walking away from ADA business, copy this article, and show your customers why they must meet ADA standards.

We continue to make great progress with the National Locksmith Automobile Association, or NLAA. The association has already mailed Silca Car Books to new members, containing hundreds of pages of key information. Plus we have issued our first set of NLAA Tech Bulletins covering full details on six new model cars.

The newsletter is due out quite shortly. So if you're interested in locksmithing on cars, consider joining the NLAA! And I am sure you can see that we have not been shortchanging readers of *The National Locksmith* when it comes to automotive locksmithing. Check out this issue for more great automotive detail.

Let's face it... between the NLAA, our National Safeman's Organization, our Internet connection, codes every month, our testing program and the wide range of books we publish... *The National Locksmith* covers locksmithing like no one covers locksmithing.

There has been so much talk about the ADA and how much it is going to do for the locksmith. Well, although the ADA has been around a while now, a lot of your customers still don't realize that it applies to them.

This month's issue contains a section on the ADA designed to help you explain the law to your customers. Called *You And The ADA*, the article appears on page 47 and 48. This article is designed

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Use the Internet address if you are not on AOL.



# LETTERS

## Comments, Suggestions and Criticisms

**The National Locksmith** is interested in your view. We do reserve the right to edit for clarity and length. Please address your comments, praise, or criticism to Editor, **The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107.** (Or E-mail us at the E-mail address above.)

### Pro-Lok Takes Stand

Dear Marc,

A locksmith brought to my attention that a Pro-Lok product is pictured in a catalog that sells everything from knives to pick sets to anyone who has a dollar. I immediately contacted this company to find out how or where they were receiving my product. (Pro-Lok does not sell to them.) After a week of attempts to contact the owner of the company, it took a threat of legal action to receive a return call. The owner of the company stated that they had purchased the Pro-Lok product from another source (he would not divulge his source). He states that he had no intention of selling our products but needed a photo for his catalog and used our product for this photo. He agreed to cease the use of our photo immediately!

Pro-Lok's sales policy is firm and strong! We do not and will not sell our products direct or to unscrupulous distributors that have no business selling security sensitive tools. Pro-Lok has worked hard not with just words but with actions to prevent the mis-use or sales of our products. If at anytime a locksmith hears or sees anything of this nature, bring it to my attention for fast, hard and swift action. Pro-Lok goes out of our way to ensure the proper distribution of our product.

Not to take our obligations to the locksmith lightly, I have a much larger responsibility to our communities and

public to do whatever we can to prevent the mis-use and sale of our products. Preventing the mis-use and sale of security products requires a joint effort from us all. At Pro-Lok we really do care!

Adam Weinraub  
President, Pro-Lok

### Something Old, Something New

Dear Marc,

Even though your December 1994 issue is a combination of directory and articles, it is one of the best you have ever produced.

The article on Master Lock is very interesting. But, "what goes around, comes around." There is nothing NEW with what they have done, only improved on an OLD idea.

After Corbin & Russwin invented and came out with the Construction Masterkey System, other manufacturers had to do something to compete. Yale came out with a small ball bearing that was "dumped" by the masterkey through a small drilled opening in the cylinder. Weiser/Falcon came out with their system using a piece of a key holding the pins in place on the last cuts, and issued a shortened version of the master for the contractors to use.

Hymie Schiowitz, President and founder of Arrow Lock invented and manufactured almost exactly what Master has done. The top driver was machined with a groove around the lower portion of the pin. When you inserted the masterkey, you had to turn it with pressure and the pin would shear off. In their operation, the sheared off portion was .028" (Arrow uses a .014" step) and that portion remained in the cylinder becoming

the necessary step for the masterkey system.

Arrow stopped using the system by 1970 because of several ramifications and I am quite sure that those who remembered the problems don't really want to talk about that time of their history. I myself could tell one story about its use in Lake Point Tower downtown. But, as I smile now thinking about it, I didn't when it happened.

Laurie Simon  
Texas

### Looking For Work

Dear Marc,

I am a locksmith and safe technician. I have been in the trade for about 15 years. I have worked a number of places and have gained a great deal of experience. I have had my own business for about two years. Unfortunately, business has gotten very slow and, so, I have found it very hard to stay in business.

Therefore, I have decided to start looking for a job outside. I don't want a job in a shop, but I would like to work in an institution such as a hospital or a school.

I have come up with a number of possibilities only to learn that they give them to some trainee or an apprentice, or sometimes to someone who has not been trained at all.

Recently I went to an organization who told me that jobs are available through the carpenters union. So, I tried to get in the carpenters union only to learn that they have a large number of people waiting on the bench for jobs and they are not taking applications.



My question is this: I would like to know if there is a union which represents the locksmith?

V. Ahshonso  
New York

Dear V. Ahshonso:

*The position you are looking for is probably that of an institutional locksmith. They are locksmiths who typically have special training in the particular brands of hardware and security products that are used by their institution.*

*An interesting dilemma comes with this territory, however. In many institutions, trade employees are paid by the going rates for their trade. Because of this, it is not unusual to see a locksmith listed as a carpenter or electrician. Both of these trades offer higher pay scales than locksmithing. To gain the high pay, a locksmith may be assigned a different title, but still continue doing the locksmith work of the institution. And, often, to get these positions requires having a carpenter's or electrician's union card.*

*As far as locksmithing goes, we know of no union that exists in the United States. However, such organizations as local locksmith associations, ALOA and any institutional locksmith associations may be able to direct you in your search. Good Luck.*

Editor

## Getting It Right

Dear Marc,

A few comments on suggestions offered by Bert Kovash concerning Jake Jakubowski's Big Dawg series. I've worked a lot of jobs with Jake and am very familiar with his technique.

First of all, I basically agree with the suggestions, they are often regular procedure. Key generation was a very minor part of this job, negating the need to pre-cut. Although the team approach may work in some settings, few in my opinion, it would have been really impractical here.

We were masterkeying a pet food factory that was in full operation. Most doors were American Device Panic Hardware with Yale rim cylinders. They appeared, typically, to have been

installed by blind and drunken carpenters. Let's just say a little re-drilling was necessary to properly re-mount. Many doors were silo-like towers going up 10 to 12 stories. Others were 1/10 of a mile apart in warehouses.

The only way to approach this was to section it off and hit it every man for himself style. We each had a rolling cart with work table top, made by Jake, which could easily carry all tools and pin kits. We rolled them door to door, keying on the spot. Jake and I have done several big jobs with this technique. It's a lot faster with far less walking than any other method.

Jake gives you a clearly detailed map with every door labeled on the map and on the frame, you get a computer generated biting list accompanied by a chart that explicitly tells you how to pin each change, chamber by chamber. I ignore it all and work the numbers the way I always have, with graph paper and a pencil.

This particular job was factored, pay-wise, at three days. We finished in two. Oh yeah, did I forget to mention that we were paid before we began?

Pete Gamble  
North Carolina

## Police Don't Help

Dear Marc,

As a locksmith here in Marion for over 20 years, I feel I am in a position of high risk when it comes to public property etc.

If someone hires me to open a car, house, - I am very careful to check ID, license, and/or registration.

Last week, I was asked to key a car out of town for a lady who also lived out of state.

So as my national organization always says-when in doubt, check with the police. Right?

The Marion police department would not confirm or deny ownership of a vehicle for me. I was told it was not "official police business." With all

due respect, how do they then handle a stolen car or a stranded motorist.

Brad's Lock & Key  
Ohio

Dear Brad,

*Checking with the police when you are unable to verify ownership of a vehicle doesn't always go the way you plan. They are in fact, correct in saying that verifying ownership of a vehicle for your business is not a police function. Yet, except at times of high activity, I've found most departments willing to help to some degree.*

*However, if they don't, I guess it comes down to two choices: Do it and hope there are no repercussions, or walk away.*

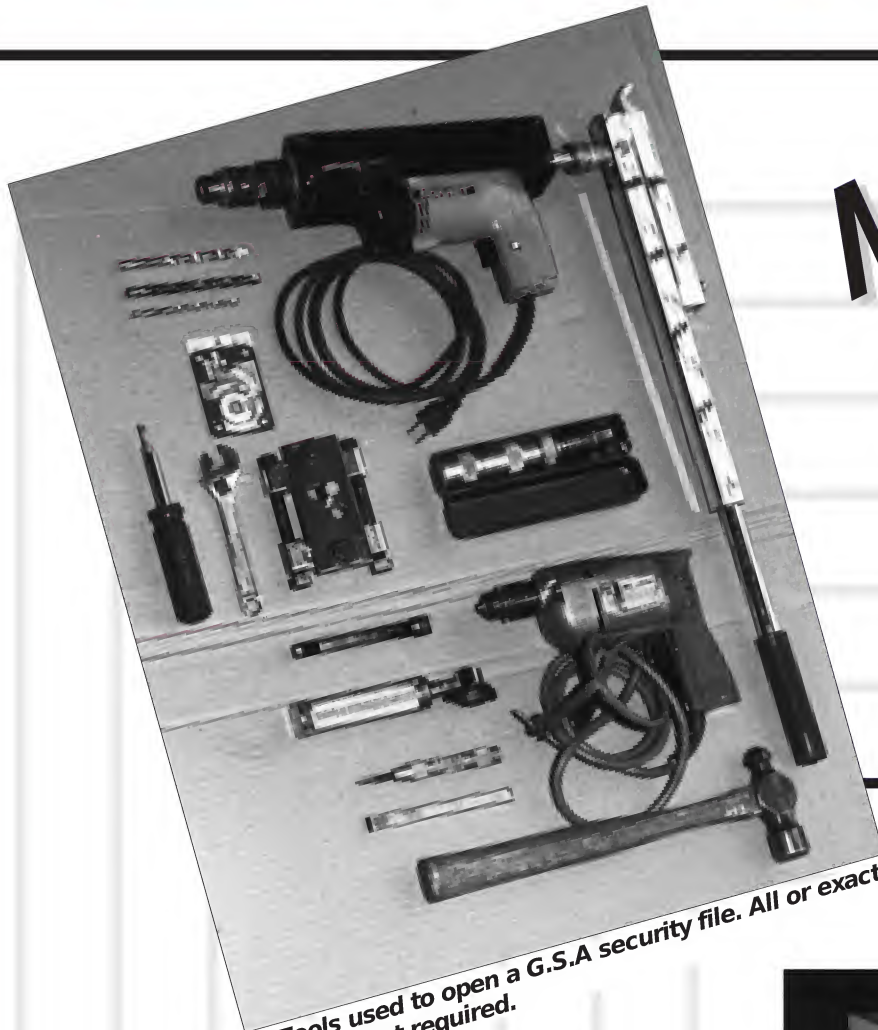
*In the few times I've run into this type of situation, I generally ask the customer to describe something in the glove box or trunk. I look for mail or some other type of information that may lead me to believe the individual is telling the truth. If I have any questions, I leave!*

Editor



*It's not safe  
unless it's  
Schwab Safe.*

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1. Tools used to open a G.S.A security file. All or exact tools are not required.



by  
**Carl Cloud**

With the cold war over and defense spending down, more and more G S A files are seeing their way to the public market.



2. The opponent: Mosler four drawer security file.



**T**here is an abundance of the old style files out there!

The cold war is over and Russia is no longer a military threat. There have been government contracts canceled, causing many small contractors to either close or cut back in their security needs. As a result, a large number of the old style G.S.A. (General Services Administration) containers are finding their way into the public market.

For many years there have been specific detailed requirements for the drilling and repair of government security containers. G.S.A. has laid down the rules for repairing their containers to achieve a secure certified condition.

The problem arose when some safe technicians did not follow the guide lines for repair. G.S.A. field inspectors were finding the security of containers compromised by poor repairs. Many of these containers held secret documents pertaining to the security of our country. Procedures for repair had to be corrected.

On August 1, 1990, the G.S.A. security files began rolling off the assembly lines with a new replaceable drawer face or 'head.' These new designed units were distinguished by a new label. The old label, which was silver with black lettering, read "General Services Administration Approved Security Container." The new label states the same information, but is silver with red lettering.

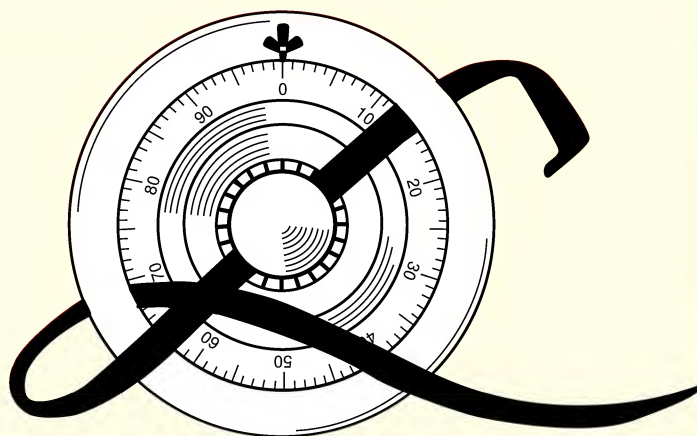
If a lockout occurs within a container using the new red label drawer and drilling is required, it cannot be repaired. No repair methods are acceptable for the restoration of the drawer. A complete new head must be installed to reinstate the security rating of the container.

In early March of 1992, the only lock meeting the new G.S.A. specifications for all new production containers was the Mas Hamilton X-07 electronic lock. In other words, all G.S.A. containers built after the March date must be equipped with the new Mas Hamilton lock and are identified by the red letter label.

**... all G.S.A. containers built after the March date must be equipped with the new Mas Hamilton lock and are identified by the red letter label.**

If a Sargent & Greenleaf or Mosler combination lock malfunctions on one of the old G.S.A. containers, the replacement lock must be an X-07.

Yes, you can install a 8400 or 8500 series S&G lock into the door, but the container no longer can hold classified materials.



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**3. Remove the plastic dial cap.**



**4 The spindle end is exposed in the center of the dial.**

The cost of the X-07 (retails around \$1200) has caused many small contractors to not repair or upgrade their malfunctioning containers. The down sizing of businesses and security materials is putting a great number of the old style G.S.A. containers into the public market. They are being found in newspaper ads under office equipment, in used furniture stores and sold at auctions.

Many prospective buyers believe these containers, especially the security file cabinets, are a prestigious item. After all, if the government requires this specific unit to hold secret items, it must be good! Consequently, many old containers are being purchased although they are locked. And, there are many locked containers out there!

The G.S.A. security files were designed to prevent any surreptitious type of entry — not

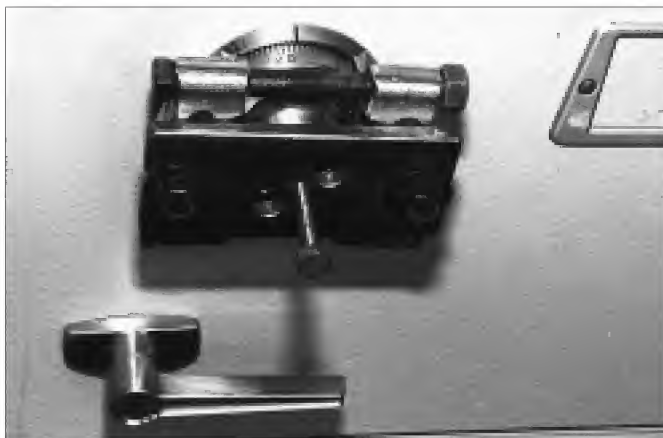
leaving a sign of an unauthorized opening of the unit. The entire combination lock body is encased within a drill resistant box and requires some special tools to make penetration. It is a formidable opponent.

If the opportunity has never arisen to open one of these safes, there may be one waiting for you in the near future. To see how it's done, look over my shoulder and we'll go through it step by step.

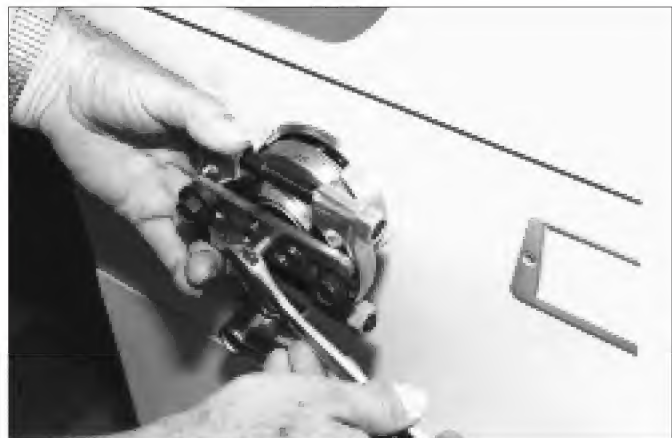
Photograph one shows the items used to open the security file pictured in this article. Each item or exact item is not required. A pressure drilling rig is not essential, but will certainly make the job much quicker and easier. A simple pen light can be used instead of an Otoscope. The dial puller can be of your choice and drill point measurements can be plotted rather than using a template.

Photograph two shows our adversary. A Mosler four drawer security file. Mosler also makes a five drawer and two drawer model. These models may come with multi locks, meaning, each drawer may have its own combination lock. In areas where dual custody is required, two combination locks will be installed side by side on each drawer. The cabinets can be ordered with insulation to protect the contents from heat or fire damage. Our sample in

**The entire combination lock body is encased within a drill resistant box and requires some special tools to make penetration. It is a formidable opponent.**



**5. The dial puller installed.**



**6. Turning the bolt pulls the dial from the spindle.**



the photograph is non-insulated. (If you hear a hollow sound when tapping on the walls or top, the unit will be non-insulated.)

The cabinet will have a label on the front of the top drawer identifying the file as a "General Services Administration" security container. This label designates the old from the new specifications. A silver label with black letters is the old model. If the letters are red this indicates the latest version. There will also be a tag installed at the base of the file stating the weight.

**W**e will assume that our safe has a lost combination. Our first step to open this container, will be to remove the dial. The black center section or disk is made of a hard plastic type material. Remove this disk in any fashion that you wish — drill a hole in the center and pry it out, or as I did, break out the center with a small chisel. (See photograph 3.) Be careful, the material is very brittle and flying pieces can be sharp. This will expose



**7. Two screws will release the 'flange.'**

the end of the dial spindle. (See photograph 4.)

The dial should not be pried from the spindle or removed with a slam hammer (automotive dent puller). Excessive pulling pressure on the spindle can cause the back wall of the lock case to bow toward the door. Damage can also occur to the drive cam that could hamper the final opening of the safe.

Photograph five shows a puller attached to the Mosler dial. The two left and right halves are clamped onto the dial. A bolt is threaded into the front connecting bar. As the bolt is threaded in, it butts against the end of the dial spindle. The continued tightening of the bolt, pulls the dial from the spindle. (See photograph 6.)

The dial puller shown was made from an automotive bearing puller. The connecting bar was added. Any puller that clamps onto the dial and pulls against the spindle will do the job. For example, Lockmaster's dial puller, item LKM 1096.

Take out the two screws and remove the dial ring — or as Mosler calls it, the 'flange.' (See photograph 7.) The only Mosler locks used in their G.S.A. containers are their models MR and MRK302, hand change and key change models. Both are a manipulation proof lock. This is the one that goes 'click click' every time the dial is turned past the zero area.



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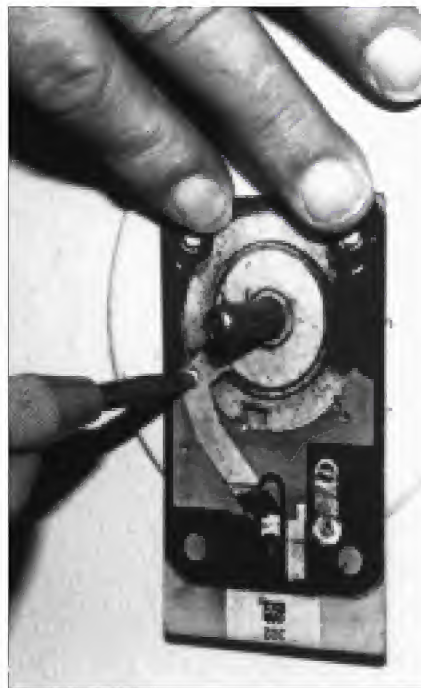
Photograph eight shows a 'Learning Unlimited' safe lock drill template for the MR302 Mosler lock. As you can see, the template is a scale size photograph showing an x-ray view of the lock. There is no guessing or measuring for any location within the lock case. When the template is placed over the spindle, it shows the exact location of the lock and its parts.

**T**o insure uniformity of products when manufactured, parts are held in jigs while being welded, drilled, etc. The jigs are checked by ensuring that they are 'squared' with the part that they are holding. If you scribed a squared line through the center of a lock case mounting hole, that line will pass through the exact center of the next mounting hole. What I am trying to illustrate: If the template is placed over the spindle and squared with the door, any drill point which you select will be right on target!

If your tool box doesn't include a Mosler lock template, the drill point is at 66x1" from the center of the dial spindle. The handing of the Mosler lock in a G.S.A. security file will always be vertical down. Be sure to mark the 66 location on the door before pulling the dial and removing the dial ring.

The drill point location we will select to open this lock, is the fence of the lever. The plan is to drill a hole through the door at a precise location that will allow us to remove the fence.

The location of the fence is center punched right through the template and into the safe door. The punch used in the photograph is an automatic center punch. Just put the



**8. Punch mark the drill location.**

point where you want the punch mark and push. A spring loaded pin impacts the surface and creates the punch mark.

Drill a hole in the drawer face at your punch mark. (See photograph 9.) What size drill bit should you use? That depends upon the size of the carbide tipped drill bit you are going to use to penetrate the hard plate. This initial hole should be made with a bit one step larger than the bit used to drill the hard plate. Why? The larger entrance hole through the soft metal of the door skin will be less apt to snag the tip of the carbide bit.

Remember carbide is very hard and also very brittle. If the tip binds or snags in the drilled hole, it will break!

You do not need broken chips of carbide wedged into the bottom of the drilled hole! I use a 3/8" carbide bit for drilling hard plate, therefore, my initial hole size will be a 13/32" or 7/16".

The metal skin of the drawer is mild steel and very easy to drill. Use a small, light weight drill motor. It will do the job just fine, and besides, you'll need this type of drill motor for the final opening.

Your standard high speed drill bit won't have to work very long before running into the hard stuff. It's barely 5/16" from the drawer face to surface of the hard plate. (See photograph 10.) You'll know when you get there. The drill motor speeds up or the sound changes as the bit stops cutting. Inspection of the hole will show a bright shiny spot at dead center — that's the hard plate.

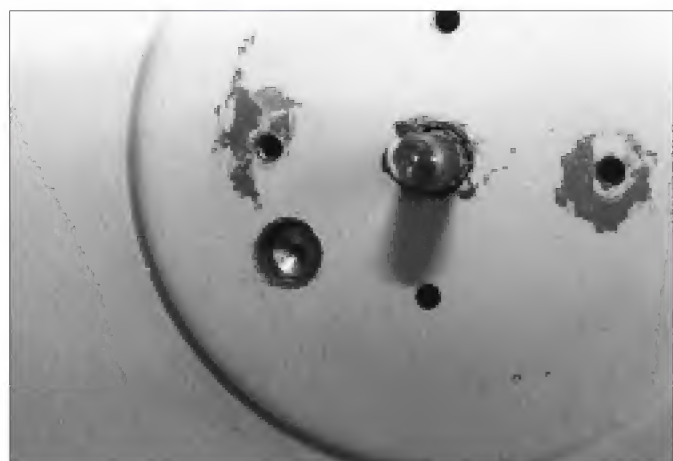
We'll tackle that next month!

**Look for  
Mosler G SA Files  
Part 2  
next month in**

**The  
National  
Locksmith!**



**9. Drill the initial hole one size larger than the carbide bit used to drill the hard plate.**



**10. The depth of the initial hole will only be 5/16" before hitting the hard plate.**

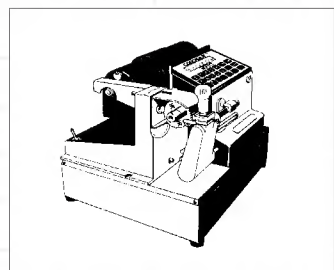


# NEWSMAKERS

## New Products and Industry News

### Free HPC Codemax™ Every Month For One Year

HPC will be giving away a free Codemax™ every month for a year! To win, you must purchase a 1200 Series Key Machine at any time in 1995.



Send your registration card and a copy of your invoice to HPC and you will automatically be entered in the monthly Grand Codemax™ Drawing! The first winner will be announced in March 1995 and each successive month through February 1996. The purchase of any HPC Key Machine, that has a prefix of 1200, will qualify you for the contest. Every 1200 Series Key Machine purchased will qualify you for one entry. All entries will remain in the drawing until they win or until the conclusion of the contest. A total of over \$47,000 will be awarded! Good Luck!

**For FREE Information  
Circle 224 on Rapid Reply**

### Schlage S200- Series Interconnected Locks

The Schlage Lock Company announced it has boosted the capabilities of its S-Series product line by introducing the S200 Interconnected Entrance

Lock Series for light and medium use commercial applications and multi-family dwellings.

For strength and security, the S200-Series interconnected lockset features a 1" throw deadbolt and Schlage's patented steel wood frame reinforcer with 3" screws.

As with its companion designs in the S-Series, the S200-Series Interconnected Entrance Locks are appropriate for light-to-medium commercial duty — such as for shopping centers and lodging applications — and in multi-family residential units where price, durability and style are priorities.

The S200-Series comes in four lever designs — Flair, Jupiter, Neptune and Saturn. The moderately priced product meets industry Grade 2 requirements, local life/safety and fire codes, and the American Disabilities Act. (The enlarged interior thumb-turn on the product's deadbolt lock, for example, ensures easy operation.) Available finishes include bright brass, satin brass/blackened, satin bronze, oil rubbed bronze, and bright or satin chromium plated. Both upper and lower cylinders are available with standard keyways, interchangeable core, Primus and Primus interchangeable core.

**For FREE Information  
Circle 225 on Rapid Reply**

### Corbin Russwin ED8000 Exit Devices

Corbin Russwin Architectural Hardware manufactures



a broad line of economy pushbar exit devices, the ED8000 Series. Three types of panic listed devices are available, including Rim (ED8200), Vertical Rod (ED8400), and Mortise (ED8600) In addition, all are available for use with Class A and lesser fire doors.

All Corbin Russwin ED8000 Series Low Profile Devices meet ANSI/BHMA A156.3 Grade 1 requirements and are listed by UL for safety as "Panic Hardware." They are constructed of heavy duty wrought steel and are ideal for high use and high abuse applications. Available in three painted finishes, the ED8000 Series also offers a wide variety of lever, pull, thumb piece, and knob trims to satisfy virtually any exit door requirement, including the "Americans with Disabilities Act."

Corbin Russwin Architectural Hardware manufactures a full line of Locksets, Exit Devices, Door Closers, and Key Systems.

**For FREE Information  
Circle 226 on Rapid Reply**

### Farfisa Intercoms

Farfisa Intercoms, introduces its current line of elegant yet sturdy line of audio intercom kits.

The kits are composed of anodized aluminum outdoor panels for single family and two family installations, designer handset with push-button for door release, and power supply.

There are nine types of kits for different types of applications, in two wire and five wire versions.

Farfisa Intercoms has been designing, manufacturing and marketing intercommunication products since 1967. The Company's pro-



ducts have a long-standing reputation in the marketplace for design, quality, reliability and advanced technology. The product line includes modular entrance panels, high resolution video intercoms and elegant designer handsets. Currently, its products are exported to 50 countries around the world.

**For FREE Information  
Circle 227 on Rapid Reply**

### New Corby Access Control Entry Device

Corby has recently added a Bar code reader to its product line. This weather-proof reader is designed to be surface mounted vertically or horizontally indoors or outdoors.



Corby's Bar Code reader is an infrared reader which will read cards that have an opaque polyester film. This film is used to protect the Bar code from damage and prevents duplication through copying. An LED is supplied with the reader providing the user with a visual feedback to the door unlock status.

This Bar code reader is compatible with all Corby Access Control Systems.

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### NT Monarch 19 Series 161 Lever Prep

NT Monarch Hardware, a Newman Tonks company, offers its durable 19 Series panic device with 161 cutout that converts standard door knob prep to lever prep.

The 19 Series, in the non-dogged position, also meets free width opening requirements and has a low profile off the door. NT Monarch's 19 Series exit device is the only panic device available that will clear the door.

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### Securitron Line Stocked By Security Lock Distributors

Security Lock Distributors has announced that they now inventory the full Securitron



line of electric and electronic security systems, and can ship orders for next day

delivery anywhere in the continental U.S.

Securitron manufactures magnetic locks, touch sense bars, digital keypads, key switches and push buttons, designed to be compatible with all access systems. All have been subjected to rigorous Underwriters Laboratories testing and also



comply with national and local building codes.

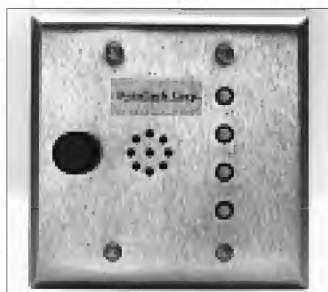
Security Lock Distributors offers such customer-oriented services as a free 304-page catalog, late hours of operation, one day delivery service, free phone, free fax and a technical assistance group to help with any questions of application, installation or performance capability.

**For FREE Information  
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### Dynalock's New #6350 Series Delay Egress Monitor Station

DynaLock Corp. introduces its new #6350 Series delay egress remote monitor station designed to work with up to four DynaLock #3101 Delay egress systems or any other competitors systems equipped with a dry contact bond sensor option.

The compact #6350 Series monitor fits in a 2-gang enclosure, includes four tri-color LED's, plus alarm to



visually and audibly report secure-exit attempt and door open conditions.

Additional equipment supplied include transformers, mounting box, and complete instructions.

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### Hellfire Auto Alarms By Harrison Electronic

Harrison Electronic Systems is turning up the heat on crime with its Hellfire series of vehicle alarms and anti-theft accessories. The Hellfire systems' cutting edge technology and roster of protection and convenience features make these alarms the best value on the market today.

The Hellfire 401 is basic and sophisticated, offering two three-channel transmitters, remote or passive arming, light flash, tamper memory, scan deterrent, code-learning, 5-stage LED,



125 dB multi-tone siren, "Warn Away" circuitry, and "Smart Valet" mode.

The Hellfire 401 is easily expandable with all outputs on board for door lock, trunk release, starter disable, optional sensors and optional remote receiver module for window roll-up, remote start, garage door opener, etc.

Code-learning allows easy replacement or addition of transmitters. Up to four transmitters can be used to control a single vehicle's Hellfire system. A single transmitter can be used for up to three different vehicles; perfect for the family fleet!

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### Dorma Bulletin Highlights Closer For Caustic Environments

A new bulletin from DORMA Door Controls Inc. introduces the 640 STA Series of surface closers for severe climatic conditions or caustic environments. Suggested applications for the fully adjustable closers include off-shore oil rigs, sewage treatment plants, chemical treatment facilities, etc.



The bulletin describes the closers' corrosion-resistant construction, and provides technical, installation and ordering information.

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### New National Cabinet Lock

National Cabinet Lock has introduced a new disc tumbler drawer and door lock with the flexafunction cam operation feature. Flexafunction locks can be set up with either a 90° or 180° cam turn. This enables one lock to be applied in a wider range of door or drawer applications. As a result, inventory requirements can be reduced.

National Cabinet Lock C8080 series flexafunction disc tumbler cylinder cam locks can be used on drawers or both left- and right-hand doors. They require a 3/4" diameter

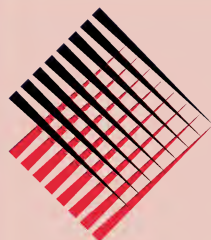


hole through a maximum material thickness of 7/8" for the cylinder. Cylinder length is 7/8".

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**Remember  
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located between  
pages 70-71 of the  
January issue.**

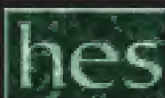


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## THE MIWA ATTRACTION

Test Article #76

by Giles Kalvelage

**M**IWA manufactures a high security cylinder which is easy to service and to work with. Key origination and lock combining is easy - if you have the correct tools. Key "duplication" is through Authorized Dealers who hold signature control cards.

Because MIWA locks work with magnets, we must review some of the simple principles of magnetism.

1. A magnet has a north pole and a south pole.

2. In magnets opposite poles attract. The north pole of one magnet will be attracted to the south pole of a second magnet.

3. Like poles on magnets repel one another. The north pole of one magnet will push away the north pole of a second magnet.

Keeping these three principles in mind will help in the understanding of the operation of the MIWA lock.

The basic lock cylinder itself, the EC series, boasts the following features:

- Magnetic pin tumblers which thwart normal picking attempts.
- An open keyway which cannot be jammed beyond repair.
- Fourteen pin chambers, though

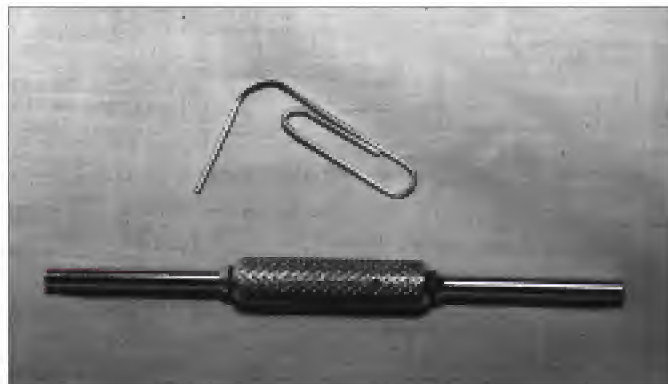
usually not all are "actively" used at any one time.

- 450,000 different combinations.

• Tumbler pins are actually small magnets inside stainless steel jackets. The jackets provide strength against the shear force of a turning attack on the plug. • All magnet tumblers are the same each with a north and a south pole.

• Frictionless operation reduces wear on pins and keys.

• Controlled keyway. Keys can only be assembled by factory authorized dealers.



1. A paper clip and magnetic wand are all that are needed to rekey the MIWA lock.



2. The spring bars act as chambers.

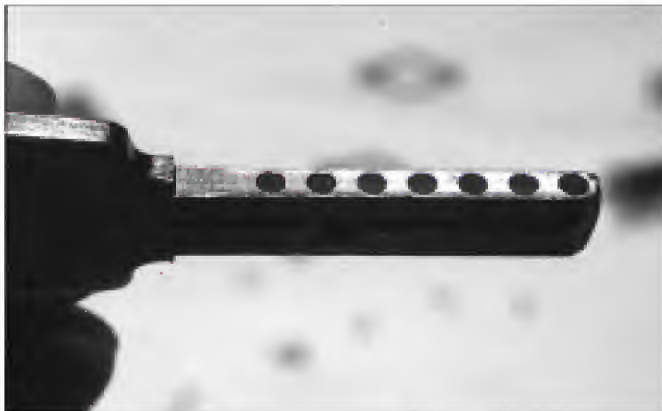
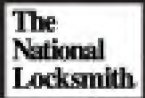


3. The tumblers stacked at the end of the wand make rekeying easy.



4. The tumbler/magnets.





5. All magnet holes on the key are filled and are on the edge of the key's blade.



6. The control card lays out the key and cylinder combination.



7. Remove the C clip on the back of the cylinder.



8. The disassembled cylinder.

- No cuts on the key mean a stronger key.

Master keying is performed on the key itself instead of inside the lock cylinder.

Rekeying tools consist of a magnetic wand, a paper clip and a screwdriver or other disassembly tool such as the Kwikset cylinder removal tool. (See photograph 1.)

Key assembly requires a little petroleum jelly, an EC Crimping tool and a magnetic wand.

MIWA manufactures locksets, auxiliary hardware, and padlocks for their keys and cylinders. With the exception of a retrofit Schlage "D" Series knob, new installations will require complete hardware purchases.

#### Keying

The key-in-knob lockset is known as the HK series. This lock contains the typical EC type cylinder. Only three differences will be noted for mortise type lock cylinders.

Before combining a cylinder, it is

best to review the product and its tools.

A paper clip is used to guide the small "tumbler" springs onto the spring bar. The spring bars, though removable from the cylinder, might be compared to the actual chambers of a standard lock cylinder. (See photograph 2.)

The magnetic wand is used to pick up the magnets for both the key and the cylinder and orient the pole of the tumbler or key magnet to the proper position. The magnetic wand has a red

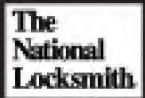
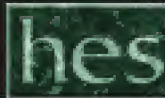
*Continued on page 20*



9. The indentation or broaching for the ball bearing at the front of the case.



10. The ball bearing and spring bar retainer in place.



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### ***Continued from page 18***

stripe around the north pole magnet and a blue stripe around the south pole magnet. Tumbler magnets of like poles may be "stacked" on the appropriate end of the wand. This will make cylinder servicing faster. (See photograph 3.)

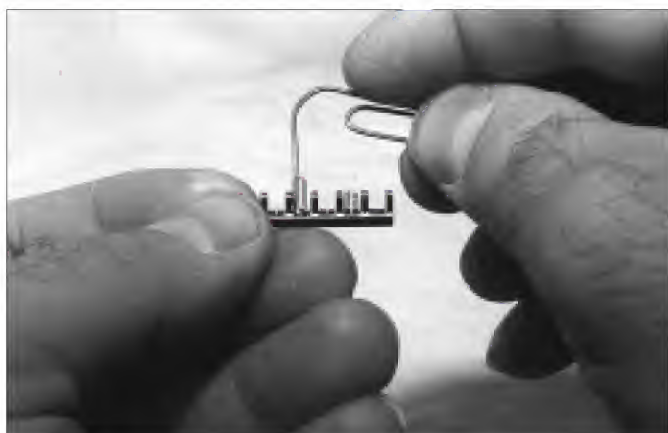
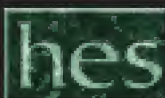
Tumbler magnets are identical. (See photograph 4.) Combinations are formed by the insertion of the magnets in a given chamber at a given polarity. Usually, there will not be a magnet in every chamber.

Key magnets are used in the key itself. There are standard key magnets which have a north or south polarity and dummy or dud non-magnets which are visually identical to the standard magnets. The dummy non-magnets are used to fill the holes in a key blank where there is no magnetic value. This aids in the prevention of key reading, physically strengthens the key, and makes the key more aesthetically pleasing.

The key blank has 14 holes which will require the insertion of either real or dummy magnets and also has one or two dimples milled on the side of the blank. (See photograph 5.) The dimples allow a ball bearing from inside the lock cylinder to recess into the keyblank. The ball bearing increases pick resistance to the lock cylinder and prevents the key from being removed from the cylinder while it is turned. There may be two dimples on a key blank because the physical location of the ball bearing on older locks was to the rear of the cylinder while newer locks have the ball bearing to the center of the cylinder.

**T**he control card provides the combination of the key and lock. If a key is factory produced, it will show the key number on the bow of the key on the side opposite the dimple. The key number will be listed at the top of the control card. The two columns of seven boxes on the right side of the control card will show the combination. Each box will have a "R" for red or North, "B" for blue or South, or an "X" for no magnet. There may also be red or blue markings on the control card to visually enhance the combination. (See photograph 6.)





**11. Placing the magnet springs onto the spring bar.**

To fully visualize the combination, lay the keyblank vertically so the tip of the key is up, the bow down, and the dimple facing toward you. The combination on the left column relates to the left side of the lock and key, the combination on the right column relates to the right side of the lock and key. Wherever there is an "R" or "B," a magnet of the same polarity will go into the lock cylinder and key in that position. Wherever an "X" occurs, a dummy magnet will be placed into the keyblank (except in master keys), and the lock cylinder will be left empty in that location.

To combine a key, start with either the right or left side of the key and its corresponding vertical control card column. Using the magnetic wand, pick up the key magnets with the appropriate side of the wand as indicated by the control card. Dip the tip of the magnet into petroleum jelly and insert the magnet into the key at the proper location.

**W**hen all polarized magnets are inserted, fill the remaining holes with dummy or dud magnets. The petroleum jelly will temporarily hold the magnets in place while you turn the key over and insert the magnets in the other side of the key. Check the key before crimping to eliminate mistakes. After all magnets and non-magnets are inserted and the key is checked, place the key into the EC Crimper and crimp the key. After the key is crimped, you might notice a small indentation of the blank on the top and bottom edges of the key. This is normal and is what holds the magnets permanently in the key blank.

Turning now to the lock cylinder

itself, once out of the knob or lock, it is easy to service, with or without a key.

For a cylinder which is to be re-keyed, simply remove the "C" clip at the back of the cylinder plug using a screwdriver, Kwikset cylinder removal tool or similar object. (See photograph 7.) At this point, the plug,

magnets, spring bars, bar retainers, and ball bearing will probably all fall out of the case or cylinder shell. (See photograph 8.) Notice that the two spring bars are symmetrical and identical on the HK cylinder. (See photograph 2.) This makes reassembly easier than on the mortise cylinder. The mortise cylinder's spring bars are handed and must be inserted in the proper direction. Instead of a "C" clip to be removed at the rear of the plug, a cam will be removed by unscrewing the cam mounting screws. Additionally, the face cap must be gently snapped off with a screwdriver on the mortise cylinder before the plug can slide out of the front of the case or shell. These are the noteworthy differences between the HK type cylinder and the mortise cylinder eluded to earlier.

When the cylinder is completely disassembled, the front of the case or shell can be identified by the indentation for the ball bearing. When reassembling the cylinder, make sure this indentation faces forward. (See photograph 9.)

To combine the cylinder, load the ball bearing into the plug. Slide the spring bar retainer onto the plug. (See photograph 10.) Place the case over the plug. The spring bar retainer should fit flush with the case.

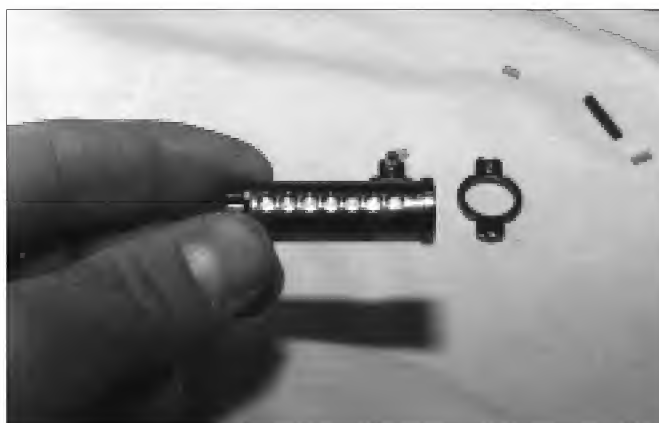
If it does not, rotate the spring



**12. Sliding the spring bar and magnet tumbler into the case.**

bar retainer 180°. Make sure that the face of the plug is facing downward and the ball bearing and the indentation for the ball bearing in the case is facing toward you. This will align the cylinder to be read easily with the control card. Twist the plug about 20° in either direction to move the plug cups away from "the bible" of the case. After some practice loading the cylinder should become second nature, but putting a piece of tape over the face of the plug and onto the case helped hold it in position and made the combining process easier. Lay the cylinder face down on the bench or table.

Pick up a spring bar. The spring bar will become the "chambers" within the cylinder. Please remember that spring bars for the HK Series cylinder for knob locks are symmetrical while the mortise cylinder spring bars are handed and must be inserted in the proper position. Using the control card to



**13. Plug cups hold the magnets under spring pressure and prevent the cylinder from turning.**



determine the positions of the spring bar that need to be contain tumblers, use the paper clip and insert the magnet springs into their proper locations. (See photograph 11.) Remember, an "X" on the control card means no magnet will be placed in that position. Make sure that you are combining the proper side of the lock with the proper column on the control card.

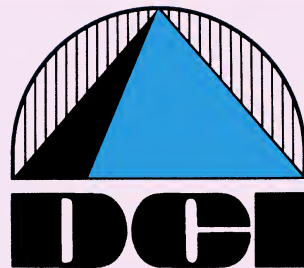
Using the magnetic wand, pick up the proper polarity magnet and place it on top of the proper spring. Gently feed the spring bar with the magnet into the cylinder. If your cylinder is aligned properly so that the ball bearing indentation of the case is facing toward you, the bible on the left will be combined to the left column of the control card, the bible on the right with the right column of the control card. As the magnet touches the plug, the plug should hold the magnet in place, allowing you to insert the spring bar a little further to load next magnet. (See photograph 12.) Once you've finished loading the first spring bar, load the second. Remember, the magnetic wand can stack all of the tumbler magnets on

the appropriate end of the wand, reducing time on the job. Install the second spring bar retainer and the "C" clip and tailpiece. Test the key for proper operation. If the key does not work, the cylinder (or the key) is miscombined. Assuming it is the cylinder which is miscombined, simply remove the tailpiece and recombine. As long as the cylinder is out of the lock, it can always be disassembled. Because the magnets are the same for each combined chamber, they are reusable.

The magnet springs are very small and one may be tempted to use cam lock springs as a replacement. The factory advised against this as the springs are designed to exert a specific amount pressure against the magnet to force them into the cups on the plug, thus locking the cylinder. (See photograph 13.) If too much pressure is exerted against the magnet, it is possible that the repelling force of the key magnets against the cylinder magnets may not be great enough to force the cylinder magnets into the spring bar and out of the plug cups. This, of course would cause a lockout.

A unknown key can be decoded using the magnetic wand. By checking each key magnet with either side of the wand, it is possible to determine if the magnet is north, south or a dummy. Place the tip of the wand on the key magnet. If the wand is strongly attracted, it will be that of the side of the wand touching the magnet. If it pushes the wand away or to the side, it is the opposite polarity. If the wand has little pressure either way, it is a dummy non-magnet. This method should only be used when attempting to decode a key unless you are familiar with the system.

Combining a cylinder to a decoded key could cause problems if the decoded key was a master key. Because change keys are developed under the master by rotating inactive chambers around active magnets on the master key, master keys have more active magnets in them than do the lock cylinders and change keys. Inadvertently keying a cylinder to a master or sub master key may restrict the operation of the cylinder from keys that it was originally designed to operate.



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# AUTOMOTIVE SECURITY

## MAKING THE NEXT MILLENIA

Test Article #77

by Michael Hyde

Mazda now has entered the luxury car market with their version called the Millenia. The Millenia uses a 4-Track Internal High Security keyway (See photo 1). The locks, keys and tumblers are made by a company called Tokai Rika. This company also makes the locks, keys and tumblers for Lexus. That is why you can use the same tumbler kit as the Lexus to service the Millenia. Tokai Rika has an office in Battle Creek, Michigan that cuts keys by code for the dealers and sends them out via second day air. The Millenia used the 20,000 - 21,200 code series and the Ilco LXP-90P/Silca TOY40P keyblank.

### Ignition Lock

Photograph two shows the ignition lock assembly, out of the car. The ignition cylinder is held in the housing by four serrated, solid roll pins. To

remove the cylinder, you will need to drill a small hole next to each pin and pry them out. (See photograph 3.)

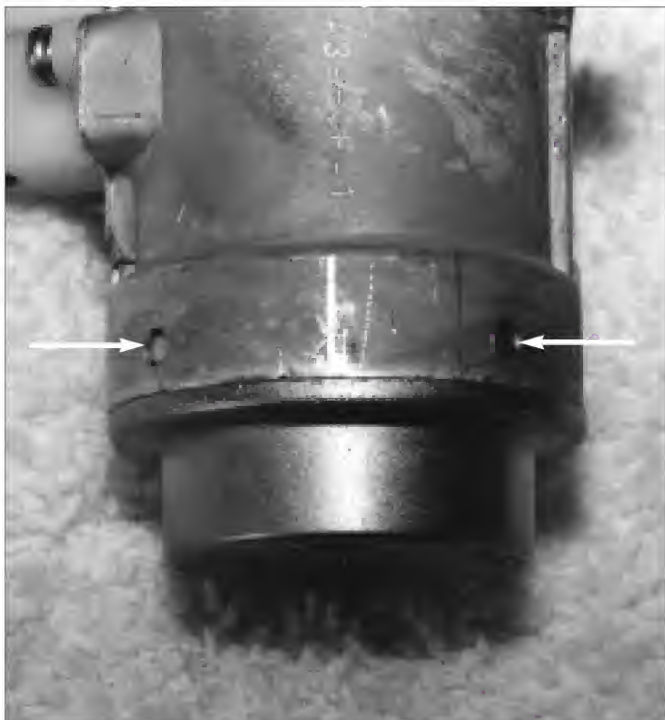
Photograph four is a view of the cylinder out of the housing. The face cap is held on the lock cylinder by a small tension pin. Remove the pin and separate the face cap from the cylinder housing and pull the cylinder plug out the



1. The Millenia key is an internally cut high security key using a keying system nearly identical to the Lexus.



2. The ignition lock and cylinder removed from car.



3. Four solid, serrated pins hold the lock cylinder in the housing.



4. The lock cylinder removed from housing.



**5.** After removing the spring pins, the facecap can be removed and the plug pulled from the lock.



**6.** Close up of the lock plug showing tumbler positions.



**7.** The door lock with switch on the back and a small access hole allowing for illumination of the lit keyway.



**8.** The disassembled door lock.

front of the cylinder housing. (See photograph 5.)

A close up view of the ignition cylinder plug shows that the first four tumblers are solid and the next three are split, for a total of seven tumbler positions. (See photograph 6.)

#### **Door Lock**

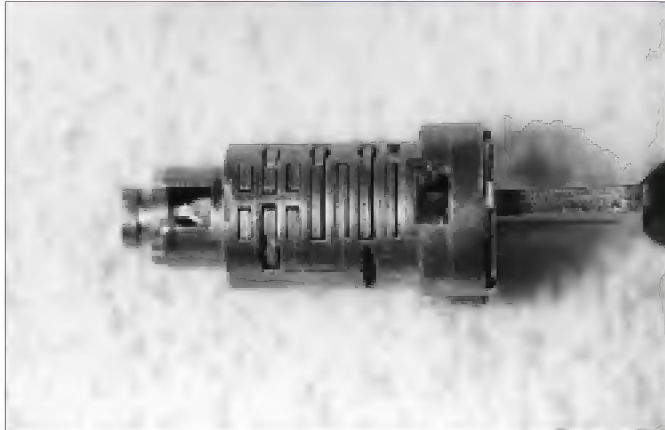
The door locks for the Millenia have an alarm switch attached to the rear of the lock. A little window present on the front section of the lock housing allows a light source to shine through and illuminate the keyway. (See photograph 7.) To disassemble, remove the alarm switch, remove the E-clip on the tailpiece and remove the re-usable face cap. The cylinder plug will pull out the front of the housing. (See photograph 8.)

A close up view of the door cylinder plug shows the first four tumblers are solid and the next three are split, for a total of seven tumbler positions. (See photograph 9.)

#### **Trunk Lock**

Photograph ten shows the trunk lock which also has an alarm switch. To disassemble, remove the alarm





9. The door lock tumbler positions.



10. The Millenia trunk lock.

### Tumbler Positions:

LEFT	Tip	RIGHT	
X	8	T/G	X=Not Used
I/T/D	7	I/D/T/G	I = Ignition
I/T/D	6	I/D/T/G	D = Door
I/T/D	5	I/D/T/G	T = Trunk
X	4	I/D/T/G	G = Glove Box
X	3	I/D/T	
X	2	I/D/T	
X	1	I/D/T	

switch, remove the E-clip on the tailpiece and remove the re-usable face cap. The cylinder plug will pull out the front of the housing. (See photograph 11.) A close up view of the lock shows the first four tumblers are solid, the next three are split, and the last one is a solid, for a total of eight tumbler positions. The last tumbler is for the valet function and is always a number four depth. (See photograph 12.)

#### Glove Box Lock

In the glove box lock there is a spring retainer on the rear of the lock

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**11. The disassembled trunk lock.**

that needs to be depressed to remove the plug. The lock uses tumblers in positions 4 through 8, and are all solid tumblers. The last tumbler is for the valet function and is always a number four depth. (See photograph 13.)

#### **Keying Kit**

Photograph 14 shows the Auto Security Products Keying Kit Number A-30-110. This kit is used for both the Millenia and the Lexus.

#### **Making First Key**

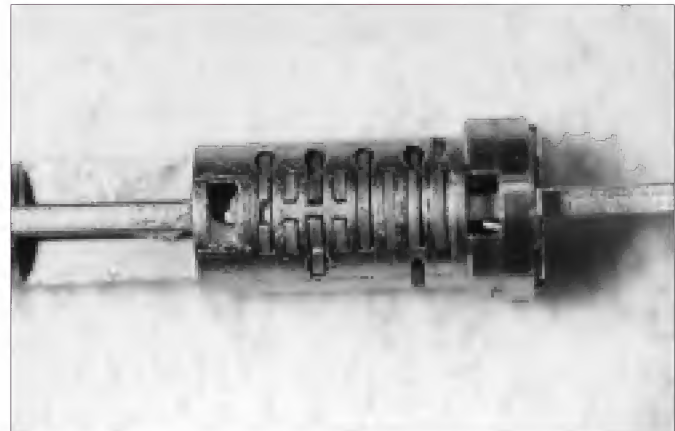
Before attempting to make keys for

this vehicle, there are a few facts to remember:

1. First, the locksmith must have a high security key machine and code attachment.

2. All tumblers are numbered, but are reverse of normal depths. A number 5, for example, is the shallowest cut and a number 1 depth is the deepest cut.

3. Tumbler position 8R is always a number 4 depth for the master key,



**12. Trunk lock tumbler positions.**

and a number 3 depth for valet key. This is the only difference between a master and a valet key.

4. Tumblers 4L, 3L, 2L, 1L & 8L are not used in any locks, but must follow MACS in order to work smoothly.

5. Because of the tolerances of the center groove you cannot have a number 5 depth on the left track opposite a number 4 or 5 depth. This is because there wouldn't be enough room for the key to pass down in the keyway of the lock.

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13. The glove box lock removed and disassembled.



14. The ASP A-30-110 pinning kit for Lexus and Mazda Millenia.

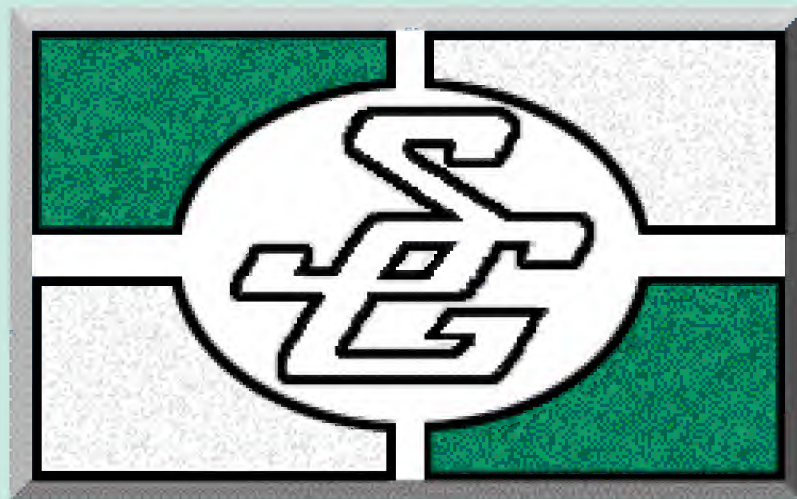
#### Procedure

The Millenia has an electric trunk release on the drivers door. There is an on/off switch for the electric trunk release in the top section of the glove box. Open the trunk and remove the cylinder. Disassemble

and decode, to make master key, since all the tumblers needed are located in the trunk lock.

Code Series: 20000-21200  
Key Blank: Ilco LXP-90P / Silca TOY40P  
MACS: 3  
Must Have High Security Key Machine To Make These Keys.

*Michael Hyde is the author of the AutoSmart manual, published by The National Locksmith.*



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# ELECTRONIC SECURITY

## CCTV, GETTING THE WHOLE PICTURE

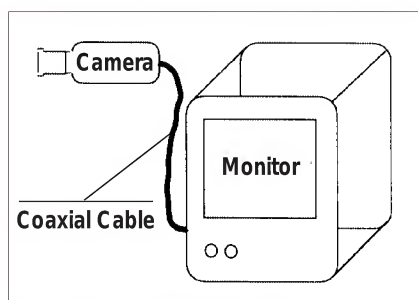
Test Article #78

by Mark Rischar

**M**ark Rischar is a Warrant Officer assigned to the 902nd Military Intelligence Group at Fort George G. Meade, Maryland. There he serves as Chief of the Intrusion Detection Systems and Physical Search Section of the Group's Counterintelligence Technical School.

With his expertise in the area of intrusion detection systems, Mark will be writing on various aspects of electronic security throughout the year.

With today's advances and miniaturization of microprocessors or "chips," electronic gadgets, to include security devices, are becoming ever more affordable for widespread use. There is no better example of this than CCTV systems. CCTV is an adopted, common acronym for Closed Circuit Television and is an excellent supplement to all physical security and access control devices. This is a technology the average locksmith can offer his or her residential or industrial customers, even if having only a minimum knowledge of electronics or video technology. Providing this service should also improve the locksmith's marketability



**1. There are three basic components to a CCTV system: the video imaging device (camera), the transmission media (usually coaxial cable) and the video display device (the monitor or television).**

and service base while remaining current with electronic security trends.

CCTV systems are presently widely used in locations where there is a need for video surveillance. This could mean a single camera mounted on a front door or porch of a homeowner to see who is at his door or in his driveway to many hundreds of cameras mounted throughout a large establishment for a complete picture of the ongoing activities such as in a gambling casino.

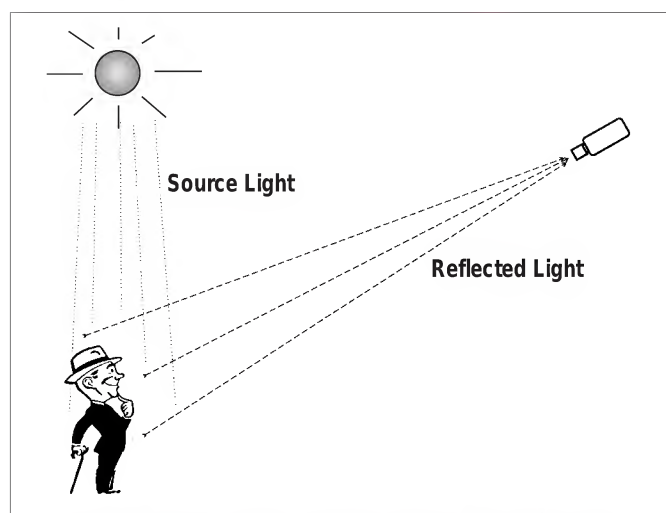
Nowadays, it seems rare not to find video surveillance cameras in retail establishments or service related businesses and shops since these systems are relatively inexpensive, provide real time feedback and have capabilities for providing a somewhat permanent record of what has transpired. Obvious uses include spotting shoplifters;

guarding against inventory shrinkage from employees; perimeter/interior surveillance of facilities or warehouses; overlooking cashier registers in case of robbery; etc.

There are three basic areas to a CCTV system. First and probably most important is the video imaging device (the camera and all assorted accessories), the transmission media (usually coaxial cable), and the video display device (the actual monitor or television) used to provide the picture the camera is sending. (See illustration 1.)

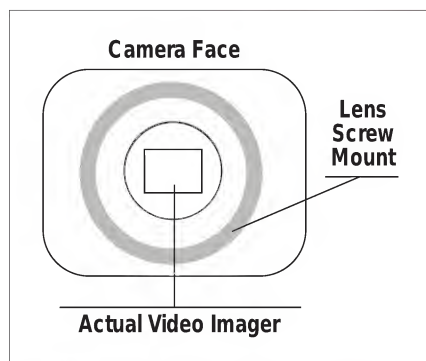
The most difficult and critical task involving Closed Circuit Television is the selection of the camera and lens. There are many types of cameras available for just as many applications. Variable factors such as light sensitivities, lens view angles, formats, color vs. black & white, type of irises, built in microphone and price must be considered prior to selection. The actual application, installation and intended use of the video system will answer many of the factors in question.

There are basically two different types of cameras in relation to the imaging process. Image tube cameras and Charge-Coupled Device (CCD) cameras. Image tube cameras dominated the market until the late 1970's when CCD cameras, with a marked improvement to their sensitivity to light, started to be mass produced. Tube cameras are comparatively large, bulky, have some problems with internal heat generation but have a higher resolution or clarity in the generated picture. CCD cameras are very durable to vibrations, low power, smaller, cheaper and can have almost the same resolution or clarity as tube cameras. CCD cameras also seem to last longer.



**2. The camera, like the human eye, sees reflected light.**





**3. While there are currently four camera formats, the formats are not the actual size of the video imager.**

As stated earlier, one of the more important specifications of the camera is its sensitivity to light. This can be learned by simply reviewing the company "data sheet" on that camera for its sensitivity which is usually reported in "lux (lx)" or "footcandles (fc)."

One footcandle of light is the amount of light that can be measured on a one foot square, one foot away from a lit candle. A lux is just the metric conversion of one fc; one lux equals .0929 footcandles. You must be careful on how the data sheets read

when comparing different cameras since manufactures use both fc and lx. The camera, like the human eye, actually sees reflected light when looking at objects. The quantity of reflected light which is needed to produce a usable video image is what actually determines the sensitivity of the camera, not the source or scene illumination. Keep in mind though, the brighter or stronger the source light or scene illumination, the stronger the reflected light will be. The lower the fc or lx rating of a camera, the more sensitive to light or the better the camera will see in darker conditions. (See illustration 2.)

Currently there are four camera formats available for purchase within CCTV, 1", 2/3", 1/2" and 1/3". The formats are not the actual physical measurement of the video imager as you would think, but in actuality much smaller. (See illustration 3.) For example, a 1" format measures 12.8 millimeters (mm) across and 9.6mm high. (See illustration 4.) This equals to about 1/2" wide and a little less than 1/3". A good rule of thumb on what format camera you have is to measure the width of the imager and then double it. The video imager is

12.8mm	8.8mm	6.4mm	4.9mm
1"	2/3"	1/2"	1/3"

**4. The actual sizes of the four formats are, in fact, smaller. The video imager of the 1" format is actually 12.8mm across and 9.6mm high.**

visible and located at the very front of the camera. These formats determine the field of view of the camera. Comparing a 1" format to a 1/3" format camera with the same lens would give you about five to six times the viewing area using the 1" format camera. Just remember, using a smaller format camera will give you a telephoto effect on the viewing area compared to larger formats with the same lens used.

There are three main types of lenses for cameras, standard, wide angle and telephoto. A zoom lens is considered a combination of the other three. A standard lens, one of the most common, is the lens with the focal length (expressed in millimeters) that would give a picture or field of view



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comparable to the human eye. This lens would see the same field of view, distance left and right, as the human eye. The standard lens would be different for different formats of cameras. For example a standard lens for a 1" format camera is 25mm, whereas the standard lens for a 1/3" camera is 8mm. The other standard lenses are 12mm for a 1/2" format and 16mm for a 2/3" format camera. Wide angle lenses provide for a "Fish-eye" view and usually range from 3.7mm to 16mm. Telephoto lenses provide for a telescopic or enlarged view and range from 50mm to about 180mm. Zoom lenses cover a large focal length, for example from 25mm to 350mm. There are also special application lenses such as the pinhole and angled lenses. (See illustration 5.)

With your selection of a lens, you must consider what type of iris is needed. An iris of a camera is the actual device which regulates the brightness of the picture by regulating the amount of light entering the camera. This is synonymous to the F-Stop or aperture of a camera. Some of the more basic lenses do not have an adjustable iris (manual or automatic) which is actually a fixed F-Stop and

2.8mm	Wide Angle
4 mm	
5.8mm	
8mm	
10mm	Standard
12mm	
15mm	
16mm	
25mm	Telephoto
35mm	
50mm	
75mm	
90mm	
110mm	
180mm	
350mm	

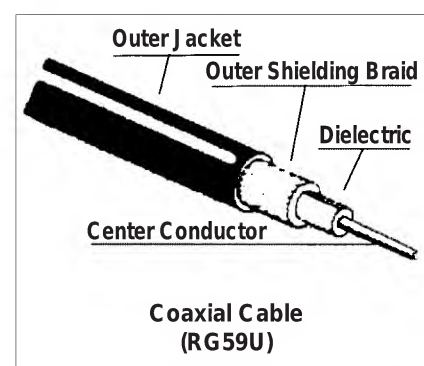
**5. A variety of lens types exist depending on the customer's need.**

nothing can be done to adjust the passage of light. Manual Iris lenses have an actual F-Stop ring near the lens mount that lets the operator manually select the aperture setting which best suites the lighting conditions. This must be done at the cameras location. Auto Iris lenses enable the camera to make self adjustments to the aperture setting allowing just the right amount of light to enter the camera even in varying light conditions. The operator can make initial adjustments for correct brightness. Motorized Iris lenses allow the operator to make aperture or brightness adjustments from a remote location, normally the monitoring station. Lenses for CCTV systems normally come in two mounting formats, "C" and "CS." "C" mount is the standard and is slightly larger in diameter than the "CS." Both lens types screw into the mount. Some smaller cameras have a or triple bayonet mount where the lens is pushed on and rotated an eighth of a turn until it locks into position. You must be careful when purchasing extra or add-on lenses to your cameras, paying close attention to the lens mount.

Once the camera and lens are selected, the video needs to be transmitted to a monitor or viewing device. A popular and common transmission media for CCTV is RG59 Coaxial Cable. The cable is tuned for

75 Ohms impedance, matching the impedance of the video out connection of the camera. This will give you maximum video signal transference from the camera to the cable and finally into a monitoring device. Other types of transmission media include fiber optics and radio frequency (usually in the microwave region). Coaxial cable is by far the cheapest and easiest method. RG11 and RG6 are also 75 Ohm nominal impedance cables and can be used with excellent results. RG11 and RG6 are especially recommended when the distance between the camera and monitor starts to exceed 1000 feet. These cables have a lower signal loss per foot than RG59 and are best over long distances. (See illustration 6.) This is accomplished by adding extra shielding around the dielectric of the cable and having a thicker inner core. You want cables that are well shielded and have a solid core. Braided copper shielding is best, since other types, i.e. Aluminum, does not conduct as well and likewise does not offer a better "ground" for the cable. Most all CCTV cameras are equipped with a "BNC" video out adapter. (See photograph 7.) This requires the use of BNC cable ends. BNC ends are easy to install using the right equipment. A multi-level coaxial wire stripper, matching the coaxial cable used, and a BNC crimper is all that is needed to make quick and easy connections. (See illustration 8.)

Monitoring devices are also very diverse. Any normal television with a "Video In" could act as a monitor. It is best to use monitors designed just for CCTV. These are available in black & white or color and from 9" to 19" in size. CCTV monitors normally have audio and video "BNC" inputs and outputs, making them versatile and



**6. Coaxial cable by nature is one of the best CCTV transmission mediums.**



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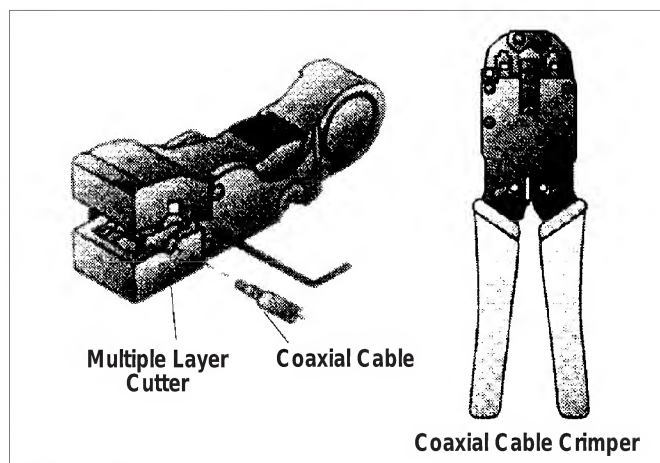
**7. These are the typical bayonet or BNC connectors used with CCTV.**

easy to use with other CCTV accessories.

CCTV systems can be purchased complete. When a system is complete, it contains a lens, camera, cable and monitor. Normally these systems are very limited in their expansion capabilities, but do provide a working system right out of the box. On most occasions it will be necessary to plan and design a system for its intended use and purchase the hardware accordingly. Other accessories for the more complex CCTV systems include

various stationary mounts for the camera, pan and tilt camera mounts, time lapse video recorders, video switchers, video splitters and video multiplexers.

Closed Circuit Television has become an important link in today's security chain. Even though the details of electronic video imaging are complicated, installing and maintaining CCTV systems are not, since all the work is done by the camera. These systems offer an instantaneous view of what they were



**8. Tools for stripping and connecting coaxial cable.**

installed to observe with the option of a permanent record on video cassette. Besides the security value of anti-theft and anti-vandalism, CCTV can also be used in many unorthodox ways. One example would be by farmers to keep a watchful eye on livestock. In recent years, basic CCTV systems have decreased in price, making themselves more available and a valued security asset with many applications for residential and small retail businesses.



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# BEGINNER'S CORNER

## Making Your Advertising Work For You!

**Y**ou may have heard this saying before, "It takes money to make money." Probably the best money spent is for advertising to get your company's name out to the public. In order to get the business, people have to know who you are, where you are and how they can get hold of you when they need work done.



by  
**Eugene Gentry**

There are many ways to advertise, some are expensive, others are free. Business cards are an example of inexpensive and effective advertising. In fact, the first thing you should do when you start up your business is to have some nice business cards made up. The cards should contain all the information about your business, the name, location, your specialty, if you have one, and the phone numbers where you can be reached at any time.

One locksmith I know had some magnetic business cards made up. This was an advantage because his card is on my refrigerator, where as all other business cards I receive are filed in various unknown places. A computer security company had two types of business cards printed. One was a regular size card and the other was printed on a Rolodex insert card.

Your card should be passed out at every job you do, and when business is slow, stop at businesses, and apartments and give your card to the manager. On occasion, this will result in an immediate job where the manager will say, "Can you make me some duplicates," or "I have a broken lock on the back door. Can you fix it?"

Another first in advertising is the sign on your truck or van. Take a pencil and pad and sketch out what you would like to see on the side of

the truck, then check to see who does truck lettering in your area. If your vehicle is used both for business and personal, or just for monetary reasons, price out a magnetic sign. These come in various sizes and prices, and can be placed on the door or on the side of the truck.

As for getting your name out to the public, consider an ad in the daily or weekly newspaper. Ask about any free advertising. On our end of the city, there is a weekly community newspaper reaching 20,000 people in the area. For free, they profile a new business and its owner along with a picture. They also have a business advertising section that is less expensive than the daily paper.

If you have a computer, you could make up a one page flyer to hand out. The flyer could tell all about your business, including what jobs you can handle. When I first started, I hand made about a dozen flyers advertising deadbolt installation. From those, I got three calls from neighbors to install the deadlocks.

There is one type of advertising that could become expensive and not productive if you are not careful. That is the Yellow Pages. In this city there are about 150 locksmiths in the Yellow Pages. Some have full page ads, some half page, others with a smaller ad, and others with just name, address and telephone number. Most of the big ads are big operations that use answering services. They have several radio control trucks, and take care of all phases of locksmithing 24 hours a day. Apparently the ads are paying for themselves as they are run year after year.

I did hear of two horror stories. A mobile locksmith ran a small ad in the Yellow Pages, which he said was quite expensive. The ad did not bring in enough business to even pay for the ad. When he called to cancel, the

salesman said the reason he was not getting enough business was because the ad was not big enough. So, he took out a larger ad. This was even more expensive and still not productive. He finally called and canceled the ad.

The second locksmith took out a one quarter page ad. He got a lot of calls from the ad, starting at nine in the morning, and he was working six to seven days a week. After paying for the ad, to the tune of \$25,000, he closed up shop and went into a different line of business.

There are other ways to advertise that are either free or are inexpensive. One was suggested by Marc Goldberg in *The National Locksmith* magazine. That was to call the local radio talk shows and suggest that they have you talk as a security representative. By doing this you can plug your own business.

You can also advertise by purchasing inexpensive give away items, such as key chains, pens, or knick knacks with your business name on them. Items like this, that you could give away, would keep your name in the public eye.

For your business accounts, have some stickers made up with your company name, and place the sticker on the door edge or jam, or place it on a safe you have worked on. You might ask if you could place a sticker in a conspicuous place.

One good investment might be in a key stamp, then when you make new keys or duplicate keys you can stamp your name on the key head.

The main thing to remember is to keep your name where people can see it, and whatever type of advertising is done it should be designed in an eye catching manner so that people will remember your business.





# The Great CLIP-OFF!

Cover  
Feature

WHEN YOU'RE IN THE FIELD WITHOUT POWER,  
YOU MIGHT WANT TO THINK ABOUT CLIPPING YOUR KEYS!

## Curtis Industries

For over 60 years Curtis Industries of Eastlake, Ohio has been supplying the automotive and truck industry with fasteners, keyblanks, code books and their all familiar Model 15 code cutter.

In fact, Curtis' deep involvement with the automotive and truck industry places them in the rather envied position as a front runner in receiving coming changes in the industry.

Unfortunately, the locksmith's relationship with Curtis has sometimes been tenuous, often being wholly dependent on the locksmith's desire and need for the hand code cutter and its accessories. For Curtis, this problem has not gone unrecognized, and recently changes were introduced for aggressively courting the locksmith market.

For the locksmith, three features are especially noteworthy; First, Curtis has restructured the pricing of their keys and equipment.

Second, a separate division has been created specifically for the locksmith. This division was formed by replacing Curtis Area Managers with Locksmith specialists to form a strong core of specially trained sales/ service technical advisors. Combined with new telecommunication and fax systems, Curtis advisors can now better address the locksmith and any problems he may be experiencing, as well as allowing the locksmith to make orders 24 hours a day, seven day a week.

Finally, there is the continuous evolution of their hand held key cutter. With the first model being introduced over 60 years ago, the Curtis hand key cutter has metamorphosed through various model numbers and designs to the current Model 15. Realizing that even a good tool can be made even better, research and development teams at Curtis Industries have formed the Model 15 into a smooth and comfortable tool.

With the majority of today's domestic vehicles requiring a 45° angle cut, the current Curtis 15 code cutter comes standard with a 45° cutter. Because GM keys operate well with a 45° cutter with respect to their inherent MACS factor, the need for a 38° cutter is limited.

To gain the most benefit from the Curtis system it is recommended that the locksmith carry both a 45° and 47° cutter. Having both of these cutters allow the locksmith to cut virtually all currently existing auto keys. Curtis does offer some specialty cutters for specific manufacturers - 38°, TOY-47°, F3-37° (Ford 10-Cut), and DM 45 (Nissan) are examples.



by  
Tom Mazzone

Previously, the cut angle could be determined by the color handle and casting finish or by the small numerals punched into one side of the anvil. The familiar red handle and blue casting was used for the 45° cutter.

The all new Model 15 cutter, however, comes with black handles and a gray finish for all angles. Instead a label is affixed to the casting in large, clear numbers indicating the punch and anvil's degree of angle. On the Curtis application chart, the correct angle punch is indicated as well as what cam and carriage set to use. This insures that a correctly cut key is generated with respect to that vehicle's MACS factor.

The depth of cut is still controlled by the use of interchangeable depth cams which correspond to specific motor divisions and/ or key code series. Removing a slide pin and inserting the specific cam is all that is required for correct depth setting. Once the key biting is determined, the arms of the cam are set for the correct depth at each space. Because of its design, the biting does not have to be reset, reentered or remembered until a different biting is used. This feature reduces the likelihood of miscuts and makes producing several keys of the same biting much easier. This is especially appreciated in a double sided 10-Cut key when 20 different cuts have to be made.

Like previous models, the spacing is controlled by the use of spacing notches or position slots in the cam's corresponding carriage.

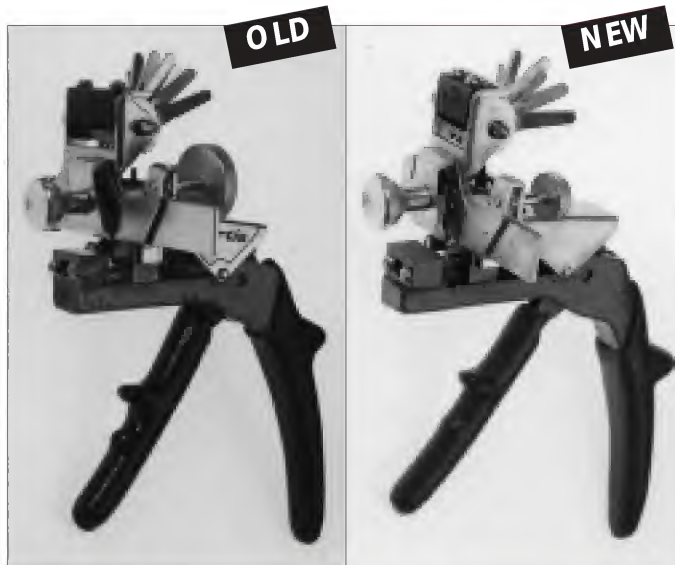
The next improvement is the larger carriage advance knob which measures 1-1/4" in diameter. The original advance knob was 3/4" and had a heavy knurled finish. The new larger knob has a finely knurled finish allowing greater ease when feeling the detent spring click into the cutting position slot in the carriage. This insures accurate spacing during key generation. The larger size knob also reduces fatigue and discomfort for the technician when doing a vehicle that requires the use of a lengthy progression chart to generate a key.

Probably the best improvement of all is in the new styled non-adjustable saddle spring. The saddle spring is located on the top of the code cutter frame and is gold in color. This part sets the code cutter's primary adjustment.

In earlier models, this saddle had a slotted, adjustable screw to set the spring tension. An acorn nut was then used to secure the adjustment in place. This, of course, meant an other adjustment was required and needed to be maintained for accurate key cutting. The new saddle, however, requires no maintenance or readjustment.

The final depth adjustments are still made as in earlier models with a depth adjusting screw which threads into the code cutters main frame, below the cam, and is double nutted.





**1. In existence for over 60 years, the Curtis key cutter is constantly making improvements.**

The current improvement by Curtis make their #15 cutter even more field serviceable and practical to own. If the saddle spring requires replacement it requires simple removal of the saddle pin and "C" clip. No adjustment makes this step fast and easy.

The Curtis Model 15 can accurately cut foreign and domestic keys to factory tolerances. Remember, these keys are produced by punching through the blank and do not have the same smooth finish as a key produced on a code machine with a tool steel cutter. However, they are accurate and, as mentioned earlier, require no power source making transport to the job site easy.

All in all, the combination of focusing on the locksmith and improving the Model 15 will make key cutting in the field more comfortable and more practical for the locksmith. A combination that can't be beat. For more information contact Curtis Industries, 34999 Curtis Blvd., Eastlake, Ohio, 44095-4000. Phone 800-555-KEYS, 800-289-2878 or FAX 800-867-6020.

#### **A-1 Security Mfg.**

A new, strong and exciting runner in the hand held key cutter market is Pak-A-Punch™ by A-1 Security Manufacturing of Richmond, Virginia. The Pak-A-Punch™ unit is a hand operated key cutter that can cut an extremely wide variety of keys for foreign and domestic vehicles.

It has a smooth, low profile that fits very comfortably in the operator's hand. The molded hand grips make for less fatigue when there is extensive use of the tool. This is a nice feature if a locksmith spends a few hours on a used car lot with several vehicles to make keys for, or must go through an extensive progression list in generating a key.

The punch is concealed inside the body of the Pak-A-Punch™. This cuts down on dirt and contaminants on the punch which would eventually require disassembly for service. There is also a plastic shield at the end of tool to direct the brass chips down and away from the operator. The punch is easily changed to accommodate the requirements of varying vehicle manufacturers' keys. This, of course, makes it necessary to carry only one punch.

The key blanks are held securely in the vise via a



**2. Although a relative newcomer to the manual key cutting market, the Pak-A-Punch is a lightweight, precision machine.**

shouldered bolt with a winged type design. Holding the blank firmly in place is a must as this type of key generation equipment punches through or shears the blank to its correct cut depth. The strength of the equipment and accuracy of cutting are enhanced by the integrated vice and clamp design.

Well understood is that correct spacing and depth are critical when using any type of code equipment for first key generation. Both are critical to a key's success or failure during operation. Pak-A-Punch™'s unique design is essential and integral to the accuracy with which it achieves both. We will discuss the spacing operation first.

The spacing operation is controlled by the meshed teeth of the individual vise and the spacing knob gear. There are two sets of teeth on each vise. The upper set of teeth engage the spacing knob gear and control the side-to-side or cut-to-cut movement of the vise and key. The lower teeth or notches engage a ball detent that keeps the spacing fixed firmly in place. The ball bearing/detent design of the vise keeps tight control of the side-to-side lash and eliminates mistakenly cutting into an adjacent cut.

A nice feature is that the back of each vise is indexed with the corresponding spaces so you always know exactly what space you are cutting. The numbers are read on each side of the main frame as the key is moved through the Pak-A-Punch™.

To change the individual vise for a different vehicle application, simply rotate the spacing knob until the vise exits the tool. The spacing advance knob gear will engage the teeth of the vise until it completely exits the tool. To reload a new vise, simply align the vise in the opening and apply very light pressure to engage the gear and vise teeth. Rotate the spacing advance knob until you see the vise is now aligned for the number one space position. Be sure to use the corresponding punch and die set.

Depth is controlled by the use of a depth knob with stamped numbers indicating each cut depth. It too, is very easily changed to accommodate different applications. The depth knob on the Pak-A-Punch™ used for this article had a slotted provision for the rounded head of a secondary key

The key cutters shown are not in proportion to each other.



## WHICH CLIPPER FOR YOUR TOOLBOX?

In the small world of hand held key clippers, two companies have refined key cutting to an art. The Model 15 by Curtis Industries, long the industry's standard, and the strong newcomer, Pak-A-Punch by A-1 Security Mfg., offer users the advantage of fast, powerless, handgrip key cutting. Each player offers distinct advantages to the locksmith.

Curtis offers a history of auto experience and key manufacturing. The Model 15 is light weight and easy to use. Cutting is well within manufacturer tolerances, even on some of the most difficult keys. The cam and carriage are easily changed for cutting various keys. The cam design allows the locksmith to enter and retain the full key bitting for continuous cutting. The application chart based on the year/make/model and the applicable code series, is clear and easy to follow. A carrying case is also available for easy access to the clipper, cams and carriages.

Minor disadvantages include the need for purchasing multiple cutters

if more than one cutting angle is required. In almost all instances, however, only the 45° or the 47° cutter are needed. Also, while the new saddle design eliminates the need for adjustment and makes replacement simpler, saddle breakage, though infrequent, is still an issue.

While a relative newcomer to the clipper scene, the Pak-A-Punch offers some of its own excellent advantages. Also a light weight unit, the Pak-A-Punch is flat in design allowing for easy storage. The smooth, even cutting action allows for continuous cutting without getting tired. Cutting is well within manufacturer tolerances on all the keys.

Because spacing and depth dimensions are designed into the Depth Knob and Vice Assembly, there is virtually no adjustment made to this machine. The Depth Knob and Vice Assembly are easily changed. But what's even more convenient is the ease with which different angled Punches and Dies

can be changed. This allows one gun to cut a variety of keys, including the commercial Schlage key when using the proper PAK-Kit.

If there are any disadvantages to be found in the Pak-A-Punch the most significant is that the bitting or cut depths are not retained, and the correct depth must be entered for each cut made. This, however, is a minor drawback when compared to the overall operation of the machine.

Other minor improvements that can be made might include offering a carrying case for the PAK-Kits. The kits are currently packed in convenient, foam lined, plastic containers that clearly call out the kit applications. And while they are easily managed as single kits, carrying all the kits without a well designed case makes access and storage a minor problem.

So, how does a locksmith choose between the two clippers? The best bet is to road test them both... and even then it's going to be a tough choice!

blank bow. To exchange depth knobs, simply use the key's bow to unscrew the depth knob and change the set up according to your particular needs. According to A-1, there is now a knurled knob in production allowing the depth knob to be removed by hand.

As part of the main frame a spring loaded ball bearing is positioned above the depth knob and drops into a detented cam on the back of the knob. As the depth knob is rotated, the ball bearing falls into the detent assuring positive alignment and a tight depth cutting tolerance. This rounded surface of the ball bearing and depth knob cam also allows for smooth operation during depth adjustments in cutting.

With the Pak-A-Punch™ the bitting must be cut one space and depth at a time. Due to the tool's construction the operator cannot input the complete bitting and then progressively cut each space. The space knob must be set to its corresponding number on the vise and then the correct depth entered for that space. This took some getting used to but became second nature after some practice. A smooth, accurate key was produced with very little trouble.

In review, the A-1 Pak-A-Punch™ is extremely well made and has a smooth, yet solid feel to it. Each of the different vises and depth knobs come individually packaged in clear plastic boxes. The boxes are clearly marked and are lined with foam rubber.

One nice feature is the Pak-A-Punch™'s ability to cut Schlage keys. The punch and die set equipped with Kit #PK3-CV1 will accurately cut Schlage cylinder keys. With this tool's ability to cut keys for Schlage, it is probably safe to assume that the A-1 will soon be eyeing a greater share of the commercial market.

For further information contact: A-1 Security Manufacturing Corp., 3528 Maryland Ct., Richmond, Virginia, 23233. Phone 804-747-0095.



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Cover  
Feature

**DON'T LET FALLING REVENUES CAUSED BY COMPETITION CUT INTO YOUR BUSINESS -  
IF YOU CAN'T BEAT THEM - JOIN THEM!**

# DRIVE BY PROFITS

If you're like most locksmiths in the trade, you probably enjoy the work you do. You probably also feel the crunch of competition when the home centers and auto parts stores expand their product lines cutting into the services you provide. Don't let falling revenues caused by competition cut into your business - If you can't beat them - join them!



by  
**Giles Kalvelage**

Whether operating a retail store or mobile locksmith service, it pays to expand your product line. The following product examples fit firmly into the realm of the security minded locksmith. Most can be effectively displayed in a shop location and marketed in a service vehicle. Keep in mind, however, if the products are in a service vehicle, you will want to mention their availability to your clients when quoting or performing service calls.

## Steering Wheel Lock

Name recognition is all that's needed to identify this use of this product - The Club. Locking onto the steering wheel, this unit prevents the steering wheel from turning. It's highly visible to the auto thief and tougher than the car's steering wheel. Removing The Club is yet another step the thief must do in the process of stealing a car. Most users of The Club are probably most concerned about theft when their car is parked in public parking lots. Parking lots are like shopping centers for the auto thief. If the thief is looking for a Trans Am, and there are two in the parking lot, one with The Club, one without, which do you think he's going to steal? Winner International heavily invests in advertising and endorsements. Almost everyone recognizes the name - The Club - when talking steering wheel locks - and they don't want to accept imitations. It's easy to sell and no work to install. Maybe the time to cash in on

sales is now. For more information contact Winner International Corporation, Sharon, Pennsylvania, at 412-981-1152. The Club has a suggested retail price of about \$60.

## Passive Kill Switch

The "Magic Touch Anti-Theft Device" by Briggs & Stratton, Stock #702264, is a passive ignition kill switch. (See photograph 1.) The starter motor circuit is always passively killed except when pressing the switch in conjunction with turning the ignition key. To start the vehicle, turn the ignition key and depress the switch at the same time. The switch is hidden from sight and mounted to the client's convenience - under the mat, under the seat, under the dash, above the visor, or elsewhere. The switch may be touched with the foot if mounted on the floor. Installation normally takes under 30 minutes and this device can be installed on any vehicle or piece of equipment with an electric start.

Although this could be an over the counter sale, you, the service technician would be a more likely candidate to install this product. The only tools required for installation is a test light and a wire stripper. The Magic Touch comes with simple installation instructions. Three wires need to be connected to the starter system. One to ground, the other two spliced into the starter motor circuit. With a suggested retail price of under \$80 (plus installation), contact a Briggs & Stratton distributor for more information.

## Steering Column Protection

Another item to consider is the Steadfast Security Collar by Steadfast Auto Security. (See photograph 2.) This product wraps around the steering column of many popular vehicles, especially General Motors products using the Saginaw Column. A collar version called "Invisiguard" is available for the Chrysler and Ford columns, and currently, Steadfast is developing a model for various Toyota vehicles.



**1. Briggs & Stratton's Magic Touch Ignition kill is easy to use and install.**

**Continued on page 38**




Continued from page 36



**2. Despite first looks, the Steadfast Collar is secure, blends in with most interiors, is easy to install, and offers new money making opportunities.**

The Steadfast Security Collar is designed to protect the steering column from forced attack through both the ignition lock and the smashing of the column to gain access to the start shaft found inside the column. The collar resembles the original column with the exception of the mounting seams. All models come black and can be painted to factory colors. It does not adversely effect the aesthetics of the vehicle, and while it goes on in about 10 easy steps, its removal is quite time consuming - making it hated by car thieves. One auto reposessor told me that the only way he'll repossess a car equipped with the Steadfast Security Collar without keys is by towing it. Recommended installed retail price is under \$200. For more information contact Steadfast Auto Security, 229 Marginal St., Chelsea, Massachusetts, 02150, 617-889-3400.



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**3. These high security, tubular locks from Orion offer the locksmith another avenue for extra income.**

#### High Security Car & Truck Door Locks

If your customer is interested in better key control for his or her car doors and trunk, Orion Pacific Trading company provides Solex - High Security Door Locks for a variety of cars and trucks. (See photograph 3.) With a suggested retail price of \$61 for three lock sets and \$46 for two lock sets, the locks replace the original manufacturer locks with a seven pin tubular lock to help resist traditional picking attempts and increased key control. Although the manufacturer claims the operation of the locks is comparable to the original manufacturer, the models we tested, Mitsubishi Truck and Acura, did have lazy pawls. But how many times have you had a client tell you his buddy's car keys just happened to open the locks on his car?

While this product can be installed by a talented customer, the instructions promote having the locks installed by a qualified locksmith or auto mechanic. Wholesale purchasing is direct from Orion, 3972 Barranca Pkwy J-323, Irvine, California, 92714, 714-830-2003.

#### Car Stereo Protection

The Lasso Lock by Calibro Corporation is a lock product with a braided steel cable that wraps around the steering wheel and attaches to a plug that locks into the car's stereo cassette deck. (See photograph 4.) Even if the steering wheel or cable is cut, the plug is secured with a seven pin tubular lock that renders the cassette deck useless if forced out. The plug has an easily adjustable tab allowing this product to be effective on all auto cassette decks.

No service installation is required on this product, making it an ideal over the counter sale. Retailing for under \$40, wholesale purchases can be made directly from Calibro Corporation, 14911 127th St., Lemont, Illinois, 60439, 708-257-8008.

#### Auto Alarm Systems

Excalibur manufactures the AL 100, an auto alarm package that retails for under \$130 and interfaces with existing auto keyless entry systems. (See photograph 5.)



**4. The Lasso Lock by Calibro is not only effective, it requires no installation, making it a perfect over the counter profit maker.**

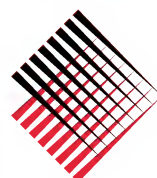


**5. Alarms are another excellent profit center for the locksmith. Excabur's AL 100 is designed for vehicles already sporting a keyless entry system.**

This full featured product is not only designed for security, but for customer convenience as well. Automatic product features include automatic door locking/ unlocking, automatic alarm arming, power backup during hot wire attempts keeping the alarm armed and functional, convenience lighting when the alarm is disarmed by transmitter, variable alarm sounds and signaling should the alarm be triggered then reset while the vehicle is unattended. Other options provide audible chirp confirmation during the arming and disarming of the system and variations of automatic door locking/ unlocking and system arming and disarming.

This product is not necessarily designed for end-user installation. However, it comes with detailed instructions and complete hardware. Remember, the AL 100 is designed for use with vehicles already equipped with keyless entry systems.

While many of the above products are available through familiar locksmith distribution sources, others are available wholesale directly through the manufacturer. For more information on wholesale pricing and distribution outlets, contact Excabur at P.O. Box 508, Douglasville, Georgia, 30133, 404-924-9876.



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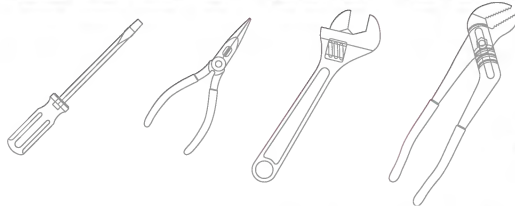
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Cover  
Feature

LOST IN THE

LAND  
OF TOOLS

**T**ools, tools, tools. If there's anything I can't get enough of it's tools, especially when it involves automotive tools. And, as chance would have it, I just happen to be the lucky one to give you just a small glimpse of a locksmith wonderland - a short review of some of the tools that make auto work easier.



by  
**Tom Seroogy**

One of the most noticeable attributes discovered while diving into this tool selection is the number of them that are dedicated towards GM service. I have no reason or explanation for this phenomena, but I do want to forward my appreciation onto those companies who want to make my life's work a little easier.

The first models for today's display are the door panel removal tools. Featured here is HPC's AST-4 Clip Removal Tool and Pro-Lok's #410 Clip Zip Tool. (See photograph 1.) These tools, and other like them, allow the locksmith to remove door panels and door clips without destroying or

### HPC AST-4 Clip Removal Tool



### Pro-Lok #410 Clip Zip Tool



**1. Door panel tools like these from HPC and Pro-Lok can save you from damaged doors.**

**NO MONEY IS BETTER SPENT THAN THAT  
WHICH CAN MAKE YOUR LIFE EASIER AND  
MORE PROFITABLE.**

damaging the clip or panel. Pro-Lok's #410 features a two piece spreader that gently separates the panel or clip from the door. The AST-4 by HPC is the more conventional pry bar style clip removal tool. Both tools are easy and effective to use on any door panel using push-in door panel clips.

The first GM tool featured today is the SWLPC-1 Steering Column Lock Plate Compression Kit by HPC. (See photograph 2.) One of the most frustrating points during a GM standard (tilt) or tilt-telescopic column tear down is the removal of the lock plate snap ring. Seated deeply in a broaching on the steering shaft the ring cannot be removed without first compressing the steering lock plate and trying to pry the clip up out of its seat and off the steering shaft.

With the SWLPC-1, the snap ring removal is easily accomplished. After screwing the unit to the steering shaft, the lock plate is compressed. The locksmith now has two hands free to remove the clip and slide it over the SWLPC's center post, eliminating the need to try and slide it over the rest of the steering shaft. The ring can remain on the post until reassembly, in which case it simply slides back down onto the shaft and back into its seat.

The SWLPC-1 comes with two shafts for GM columns with both standard and metric (1978+) threaded steering



**2. HPC's SWLPC-1 Steering Lock Plate Compressor helps with easy removal of the lock plate snap ring.**

shafts. Also included is a set of standard and metric set screws for use in locking down the shaft of the telescopic steering column.

**H**ere's another GM beauty, the EZ Pull by Sieveking Products. (See photograph 3.) Designed for removing GM steering wheels, this tool is a compact single unit that can be attached to the wheel without tools. Because the puller screws are held to the tool with snap rings, there is no lost time looking the tool box for the correct size screws. The threading of the screws allows the unit to be attached to the steering wheel by hand, eliminating the need for more than one wrench to pull the wheel. The compactness of the tool makes it usable on virtually all GM steering wheels, including the deep welled wheels found on some Firebirds and Camaros.

For door lock disassembly and reassembly we have the decapping pliers for making quick and safe face cap removal. Several locksmith tool manufacturers including HPC and Pro-Lok, carry similar removal tools like the one provided here. HPC's is the ALCP-10 and Pro-Lok's is the LT450. This pliers has a lipped end for a positive grip on door lock face caps. (See photograph 4.)

Of course, if a face cap is removed it needs to be replaced. Pro-Lok's LT 740 Face Cap Clincher tool makes fast work of this task. (See photograph 5.) While designed specifically for GM door locks, any comparably sized cap can be securely fastened onto the lock body by this tool. With the face cap and lock in position, a squeeze of the handle grips firmly bends the face cap's retaining tabs into place.

When it's necessary to read the door lock wafers to make



**3. Sieveking Products EZ Pull GM Steering Wheel Puller.**

a GM door key, the GMTD 5 GM Tumbler Decoder Gauge by HPC and the General Motors Lock Decoder by A-1 Security Mfg. Corp. are, as they say, the cat's pajamas.

For making GM door keys through the door lock, it is necessary to first remove the plug from the lock and pick the sidebar. This puts the tumblers into position for reading. While in some instances reading can be done without a tool, why make the job harder. Using HPC's or A-1's decoder, the lock can be quickly and accurately decoded. (See photograph 6.)

Let's not forget trunk locks. Again for GM's, A-1's GP1 G-Pull makes fast work in removing a GM trunk lock plug. (See photograph 7.) This unit is actually a well designed

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**4. Play it safe when removing a face cap - use a decapping pliers.**



**5. This Pro-Lok "Clincher" makes fast work of face cap replacement.**



**HPC GMTD 5**



**A-1 GM Decoder**

**6. Decoders like HPC's GMTD 5 and A-1's GM door lock decoder take the guess work out of reading the GM door lock.**

Continued from page 42



**7. For quick removal of GM trunk locks A-1's GP1 G-Pull is easy to use.**

force tool that is used to extract the plug out of GM trunk locks.

After removing the lock's face cap, attach the GP1 per the instructions. Gently rotate the large wing nut and the plug will be pulled out of the lock's casing. This tool is especially useful for removing and replacing GM trunk locks where the trunk cannot be opened due to a malfunctioning lock.

In our final review today, we take look at a rather new product, the Aable Locksmith's GM 10-Cut ignition pick. (See photograph 8.) In most instances, if keys are lost for vehicles using the GM 10-Cut ignition (both the 1994 and 1995 versions), it is necessary to destroy the lock and replace it with a new one.



**8. Use Aable's GM 10-Cut pick to remove GM 10-Cut ignitions without destroying the lock.**

Using Aable's pick, these locks can be picked and removed without suffering permanent damage. Although a small hole is drilled into the face cap to access the sidebar, a plug is provided that makes the hole almost undetectable.

**T**his wraps up our review for this issue. As is well known, there are literally hundreds of other tools and many manufacturers we did not cover in our review. Take time to contact them and request a catalog. Then take a good long look at the tools available. No money is better spent than that which can make your life easier and more profitable.



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A NATIONAL LOCKSMITH PROFILE A NATIONAL LOCKSMITH PROFILE

# CAR CHASING



Cover  
Feature

by Jake Jakubowski

One of the things I enjoy about doing these interviews is that I get to meet some really interesting and knowledgeable people. And, just like you and I, they go out every morning and make their living in this industry.

It doesn't seem to matter whether they're locksmiths, safe techs, manufacturing executives, distributors or technical support people or consultants - they've all been helpful, interesting and knowledgeable.

And they all seem to share one common attribute - a desire and willingness to share their knowledge with others in our industry. Michael Hyde fits right in....

Michael is an automotive lock specialist in the South San Francisco area of California. He has been a locksmith for about seven years and has operated National Auto Lock Service, Inc. for the past four years. He is the author of a fantastic automotive lock service manual titled "AutoSmart" (published by *The National Locksmith*) and has recently authored several articles on automotive security for *The National Locksmith*.

I caught up with Michael recently, and got him to slow down long enough to answer some questions about himself and what he does.

*To say the least, I was very impressed with your book, AutoSmart. It's quite thorough and informative. Did AutoSmart just sort of evolve as a by-product of your specialization, or did you recognize the need for a comprehensive auto lock service manual in the industry and decide to "fill the need"?*

I would say both. Initially, it started out as a small reference book for friends in the locksmith business that didn't work on autos everyday. As I started writing it I thought it would only be about 50 pages long, however, the more I wrote I realized the need for more and more information. When I was about half way through the book I then began to realize that other locksmiths, not only my friends, might benefit as well from only having to go to one book to get the information needed to generate a first key for any auto.

*As I understand it, you're going to continually update the information in AutoSmart so that those who purchase the book can keep abreast of the latest information and technology; is that correct?*

Yes, I will be writing annual updates to AutoSmart so locksmiths will have the latest and most up-to-date information available.

**JAKE TAKES TIME TO SPEAK WITH  
MICHAEL HYDE,  
AN AUTOMOTIVE LOCKSMITH EXPERT  
AND WRITER FOR  
THE NATIONAL LOCKSMITH.**

*Michael, what made you decide to specialize in automotive security, rather than another aspect of the locksmithing trade?*

When I started in the locksmith trade I did a lot of residential and commercial lock work. I found this type of work to be very repetitive where as auto work is ever changing and challenging. I enjoy working with technical things and figuring out how they work. I feel that automotive security gives me the best opportunity to do what I enjoy most.

*Are there any automotive lines that you do not service?*

No, however, I don't care to service Peugeots, Renault and some Porsche models because I consider the locks on these autos to be engineering nightmares and difficult to service adequately.

*A lot of locksmiths will not hesitate to tackle standard automotive lock work but, will shy away from the high security end of it. Yet, in spite of the complexities involved in learning the ins and outs of high security automotive lock work, there are a lot of locksmiths who feel they would like to develop their high security automotive market potential. What advice would you give them to help them get started?*

First, I would suggest that they do research by getting their hands on every publication they can that relates to high security automotive whether it be from periodicals, *The National Locksmith* Auto Association, annual publications, and/or training classes from ALOA or Chapter Associations.

I would also suggest that they talk to fellow locksmiths who already specialize in high security autos for assistance and possibly some training. After they have accomplished this and feel that high security automotive is an area they want to work in, I would suggest they buy a high security key machine. Lastly, I would strongly suggest that they continually keep up-to-date on the latest automotive information because so many cars now are heading towards high security key ways.



Michael Hyde



## A NATIONAL LOCKSMITH PROFILE A NATIONAL LOCKSMITH PROFILE

*Michael, in the past several years, there has been greater and greater emphasis placed on the "electronic" aspects of locksmithing in general. From your standpoint as an automotive security specialist, what role do you envision electronics playing in your area of expertise?*

I feel that someday standard-cut mechanical keys will be replaced with electronically coded keys. They won't have any cuts on them because each key will be assigned its own electronic serial number like cellular phones are today. Ford, in Great Britain, is currently testing electronically coded keys for their economy cars. However, the cost for this is very high and there has been little research and development. I do not see this happening in the near future.

*What difference do you see between today's automotive security specialist and the automotive security specialist five years from now?*

Automotive security specialists today do not necessarily have to be knowledgeable about high security keyways or a car's antitheft capability to get by. However, I believe that in the next five years, it will be a must for automotive security specialists to be knowledgeable and experienced in high security keyways and antitheft capabilities because more and more vehicles are being equipped with these items.

*A continuing trend by automotive manufacturers is the enhancement of their roadside assistance programs. GM, Ford, BMW, Honda and others are now offering lost key services and lock-out services as part of their program. Do you see that as a plus or a negative for locksmiths in general?*

It is a plus if the manufacturers use the locksmith industry for openings and first key generation. It is a negative for the car owner who may have to wait a day or two to get a key by code from some other part of the country, when the locksmith industry could fill the need in a more timely manner. By the manufacturers using the locksmith industry, they will have trained professionals who know the cars, locks and key systems instead of an operator located someplace else with only key codes on their computer screens. It is also a negative for the car owner if some other industry, like towing, tries to provide services that they are not trained in or have the equipment for.

*Michael, I appreciate you taking the time out of a busy schedule to talk to the National's readers through this column. Is there anything else you'd like to add in conclusion?*

Just that working on automotive locks can be very complex and time consuming depending on the auto and the lock job. I find it very important not to rush, but rather to take the time to find out all I can about the particular auto and its locking system so that I can ensure a professional job. I encourage other locksmiths to do the same.

And finally, I encourage all automotive locksmiths to get involved with the NLAA and hope that the locksmiths who have purchased AutoSmart are finding it helpful.



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### CLIP IT AND COPY IT

While the ADA has been in force since 1990, many locksmiths have not been able to take full advantage of the law and all of its requirements. To help you and your customer better understand the ADA, following is the law made easy. Use it as a marketing tool by copying it and giving it to your customers as you aid them in coming into compliance by supplying them with the proper hardware.

There are three parts to this article. First is establishing what the intent of the law is and to whom it applies. Second, it defines the requirements of the law (pertaining to hardware). Thirdly, it describes the costs and penalties in being cited for noncompliance.



# You And The ADA

## Part 1: The Law, It's Intent And Requirements

The Americans With Disabilities Act (Public Law 101-336) was signed by President George W. Bush on July 29, 1990. The intent of the new law is to remove physical, structural and discriminatory barriers in employment practices, public transportation, public accommodations (and commercial facilities), telecommunications and State and Local governmental (Title II) services that could, as defined by the ADA, be construed to violate a disabled persons Civil Rights.

Title III, of the Act, titled: "Public Accommodations," clearly states to virtually all business entities that "... it is discriminatory to deny a person with a disability the right to participate in, or benefit from, the goods, advantages or accommodations of a place of accommodation." [§36-202(a)]

The Act defines a public accommodation as practically every type of business from advertising agencies to zoos. It also includes office buildings, factories, warehouses and, under certain circumstances, businesses operated by individuals out of their homes. (§36.207)

Each entity that is covered by the Act is prohibited from providing services, etc. to disabled persons that are not equal to those provided others. (§36.202(b).)

In other words, "... a public accommodation shall afford goods, services, facilities, privileges, advantages and accommodations to an individual with a disability in the most integrated setting appropriate to the needs of the individual." [§36.203(a)]

And, that an individual with a disability, "shall not be denied the opportunity to participate in such programs or activities that are not separate or different. [§36.203(b)]

With few exceptions, §36.102(e) of the ADA excludes churches and religious organizations from compliance with the Act. However, if a church leases or rents space, for example, to a privately operated day-care center, then the facilities that are leased to the "private entity" must be brought up to the requirements of the Act.

Private clubs (Moose Lodge, Elk Lodge, Lions, BPW, etc.) are also exempt [§36.201. Also see: Section 302 (A)] to the extent that "... the facilities of such an establishment are made available to the customers or patrons" of a place of public accommodation. That is, if the V.F.W., for example, rents it's hall for wedding receptions or offers bingo games that are open to the public - then those facilities become "public accommodations" and are subject to the mandates of the ADA.

Public accommodations are required to make reasonable modifications in it's "... policies, practices, and procedures when such modifications may be necessary to afford any goods, services, facilities, privileges, advantages, or accommodations" unless the entity can demonstrate that such changes would "fundamentally alter" the goods, services, etc. of the entity in question. (§36.302)

However, the above modifications revolve more around service procedures, attitudes and "auxiliary aids" then they do around architectural barrier removal and structural renovations required by the ADA to provide disabled persons "a path of accessible travel." (§36.304)

Under the "Removal Of Barriers" section, the Americans With Disabilities Act mandates the removal of "...architectural barriers ....that are structural in nature in existing facilities ..." Examples of such barrier removal measures include: Installing ramps, making curb cuts at sidewalks and entrances, rearranging tables, chairs, vending machines and, installing ADA compatible door hardware and restroom fixtures.

## Part 2: Getting Them Through The Door

With few exceptions, any business is now required to make whatever changes that are necessary and readily achievable, in their service policies, and structural barriers to accommodate disabled persons.

The Americans With Disabilities Act Accessibility Guidelines (Appendix A to Part 36) section 4.13.9 deals with "getting them through the door" by specifying the type of door hardware that is acceptable under the provisions of the Act,

"Handles with pulls, latches, locks, and other operating devices on accessible doors shall have a shape that is easy to grasp with one hand and does not require tight grasping, tight pinching or twisting of the wrist to operate. Lever-operated mechanisms, push-type mechanisms, and U-shaped handles are acceptable designs. When sliding doors are fully open, operating hardware shall be exposed and usable from both sides. Hardware required for accessible door passage shall be mounted no higher than 48 inches (1220 mm) above the finished floor."

Consequently, to bring an entryway or a rest room door into compliance with ADA requirements, regular or standard knobsets are not allowed. Those doors must have a lever handled mechanism, a U-shaped pull or other type of latch that can be operated without tight grasping, pinching, or twisting of the wrist. Or, the door needs an automatic opener on it.

If an automatic door or power assisted door is used, Section 4.13.12 of the ADAAG stipulates that: it shall

comply with ANSI/ BHMA A156.10-1985. Slowly opening, low powered, automatic shall comply with ANSI A156.18-1984.

Such doors shall not open to back check faster than 3 seconds and shall require no more than 15 lbf (foot-pounds) to stop door movement. If a power-assisted door is used, its door-opening force shall comply with 4.13.11. There are currently no specifications regarding exterior doors. However, all interior doors, except fire doors, are rated at 5 lbf and its closing shall conform to the requirements in ANSI A156.19-1984.

Section 4.13.10 stipulates that: "If a door has a closer, then the sweep period of the closer shall be adjusted so that from an open position of 70°, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured from the leading edge of the door."

Although the ADAAG does not specify any particular type of door closer the Appendix (A4.13.10) does suggest that a closer with a delayed action feature will give a disabled individual more time to maneuver through doorways. Particularly on frequently used interior doors such as rest room entrances.

Other hardware on existing doors may include push-bars or crash bars (as found on most narrow-stile, aluminum store front doors). In such cases, that bar needs to be augmented (not replaced with) a U-shaped pull handle to aid a handicapped person in opening the door.

Toilet stall doors are subject to the same rules that govern entry and interior doors. If they have a latching mechanism for privacy reasons, then that mechanism has to comply with the provisions in 4.13.9 that prohibit hardware that requires "...tight grasping, tight pinching, or twisting of the wrist to operate." Slide bolts with large handles or the new style ADA lever-type latches are acceptable.

However, you must keep in mind that any hardware you install on a toilet stall or rest room entry door, must also comply with Life Safety Codes (NFPA 101). Which means that the lock or latch must be easily opened from the outside of the door without "special tools or prior knowledge" in the event of an emergency.

### **Part 3: Non-Compliance, Complaints And Fines**

Throughout the Americans With Disabilities Act, terms like: "readily achievable," "easily accomplishable," and "able to be carried out without much difficulty or expense" are found with reference to providing goods and services, and removing barriers to provide an "accessible path of travel" or to "make the accommodations of a place of public accommodation" available to individuals with disabilities.

Such terminology may tend to foster the impression that if a business entity felt they could not afford to comply with the mandates of the Act, they were exempt. Particularly if they are in an existing facility.

However, even if a place of public accommodation were able to show that the physical removal of barriers

would pose "an undue burden or hardship," and was not "readily achievable," that entity would still be required, under the provisions of the ADA, to "... make its goods, services, facilities, privileges, or accommodations available through alternative methods ..." (See § 36.305, 36.306 and 36.307.)

Subpart E (Enforcement) §36.501 states that: Any person who is being subjected to discrimination on the basis of disability in violation of the Act or this part or who has reasonable grounds for believing that such a person is about to be subjected to discrimination in violation of section 303 of the Act or subpart D of this part may institute a civil action for preventive relief, including an application for a permanent or temporary injunction, restraining order, or other order.

This section further states: Upon application by the complainant and in such circumstances as the court may deem just, the court may appoint an attorney for such complainant and may authorize the commencement of the civil action without the payment of fees, costs, or security.


The enforcement of The Americans With Disabilities Act is a complaint driven enforcement. That is, any individual (disabled or not) who enters a place of business and determines that, in their opinion and to the best of their knowledge, they are being discriminated against because barriers have not been adequately removed, may file a civil complaint against that establishment; resulting in a lawsuit and/ or civil rights investigation.

It should also be noted that §36.502[a] of the Act provides that "The Attorney General shall investigate alleged violations of the Act or this part," and, that "A public accommodation shall not be excused from compliance with the requirements of this part because of any failure to receive technical assistance, including any failure in the development or dissemination of any technical assistance manual authorized by the Act." (§36.507) In other words, ignorance of the Act is not sufficient grounds for being found in noncompliance.

Regardless of the outcome, an establishment neglecting the responsibility of complying with the ADA will waste time and money, and if found guilty, can be fined.

How much? In addition to legal fees and the cost of coming into compliance, an establishment found guilty is subject to a \$50,000 fine. (See 536.504[i].)

In summary, The Americans With Disabilities Act is a broad-based piece of legislation that will give unparalleled civil rights protections to America's disabled citizens. And, any "place of public accommodation" that chooses to ignore the ADA's mandates puts itself at grave financial risk.

*Editor's Note: The author, Jake Jakubowski, while having done extensive studies of the ADA and its application, is not an attorney. If there are questions regarding the ADA and its effect on your business or establishment, contact an attorney or the U. S. Attorney General's Office, Civil Rights Division, P.O. Box 66118 Washington, DC 20035-6118.* 



# ADA PRODUCT GALLERY

PRODUCTS MANUFACTURED					MISC.
CYLINDRICAL LEVER LOCKS	MORTISE LEVER LOCKS	POWER DOOR ASSISTERS	DOOR CLOSERS	TECH ADVICE TO INSTALLERS	OTHER (SEE LEGEND BELOW)

<b>Adams Rite Manufacturing Co.</b> City of Industry, CA Phone 310-699-0511 Fax 310-699-5094					Y	A
<b>Advanced Hardware Technologies</b> Charlotte, NC Phone 800-277-9377 Fax 704-525-7337					Y	A 5 6
<b>Alarm Lock Systems, Inc.</b> Amityville, NY Phone 800-252-5625 Fax 516-789-3383					Y	A 2 5
<b>APR Industries</b> Boonton, NJ Phone 800-729-2674 Fax 201-335-3008					Y	5
<b>Arrow Lock Mfg. Co. Industries</b> Brooklyn, NY Phone 718-257-4700 Fax 718-649-9047					Y	A 5
<b>Baldwin Hardware Corp.</b> Reading, PA Phone 610-777-7811 Fax 610-777-7256					Y	A 4 5
<b>Besam Automatic Door Systems</b> Hightstown, NJ Phone 800-752-9290 Fax 800-822-3726					N	A 3
<b>Corbin Russwin Architectural Hdwre.</b> Berlin, CT Phone 800-543-3658 Fax 800-447-6714					Y	A
<b>Don-J o Manufacturing, Inc.</b> Sterling, MA Phone 800-628-8389 Fax 508-422-3467					Y	A 1
<b>Door Aid</b> Kalamazoo, MI Phone 800-527-5672					Y	A 3
<b>Door Controls International</b> Dexter, MI Phone 800-742-3646 Fax 800-742-0410					Y	A 3
<b>Door Systems, Inc.</b> Hatboro, PA Phone 215-672-8087 Fax 215-672-8298					Y	A 2
<b>Dor-O-Matic</b> Harwood Heights, IL Phone 800-815-1517 Fax 708-666-0472					Y	A 3
<b>HMC, International Division, Inc.</b> Littleton, CO Phone 800-848-4912 Ext. 4452 Fax 303-794-3703					N	11
<b>Horton Automatics</b> Corpus Christi, TX Phone 800-531-3111 Fax 800-531-3108					Y	3
<b>H.B. Ives</b> Wallingford, CT Phone 203-265-1571 Fax 203-284-1460					Y	1 4 5
<b>Kwikset Corp.</b> Irvine, CA Phone 800-327-LOCK					Y	A 4 5

This guide contains a great deal of information about companies which manufacture products to help you and your clients comply with the Americans With Disabilities Act (ADA).

PRODUCTS MANUFACTURED					MISC.
CYLINDRICAL LEVER LOCKS	MORTISE LEVER LOCKS	POWER DOOR ASSISTERS	DOOR CLOSERS	TECH ADVICE TO INSTALLERS	OTHER (SEE LEGEND BELOW)

<b>LCN Closers</b> Princeton, IL Phone 800-526-2400 Fax 800-248-1460					Y	A 3
<b>Lindustries, Inc.</b> Weston, MA Phone 617-237-8177					Y	5
<b>Lockwood</b> Charlestown, NH Phone 800-446-1141 Fax 603-826-4186					Y	A 5 6
<b>Lori Lock</b> Southington, CT 06489 Phone 203-621-3605 Fax 203-621-5972					Y	A 6
<b>M.A.G. Engineering &amp; Manufacturing</b> Huntington Beach, CA Phone 714-891-5100 Fax 714-892-6845					Y	A 6
<b>Marks U.S.A.</b> Amityville, NY Phone 800-526-0233 Fax 516-225-6136					Y	A 5
<b>Master Lock Co.</b> Milwaukee, WI Phone 414-444-2800					Y	4 7
<b>Medeco Security Locks, Inc.</b> Salem, VA Phone 703-380-5000 Fax 703-380-5010					Y	A
<b>Norton Door Controls</b> Charlotte, NC Phone 800-438-1951 Fax 800-338-0965					Y	A
<b>NT Falcon Lock</b> Garden Grove, CA Phone 800-266-4456 Fax 800-777-8229					Y	A 5 6
<b>NT Monarch Hardware</b> Shepherdsville, KY Phone 800-826-5792 Fax 502-543-3089					Y	A 1 5
<b>NT Quality Hardware</b> Garden Grove, CA Phone 800-345-8819 Fax 800-345-8820					Y	A 5 10
<b>Omnia Industries, Inc.</b> Cedar Grove, NJ Phone 201-239-7272 Fax 201-239-5960					Y	
<b>PDQ Industries, Inc.</b> Leola, Pa Phone 800-441-9692 Fax 717-656-6892					Y	5
<b>S. Parker Hardware Mfg. Corp.</b> Englewood, NJ Phone 800-772-7537 Fax 201-569-1082					Y	A 4 5
<b>Power Access Corp.</b> Collinsville, CT Phone 800-344-0088 Fax 203-693-0641					Y	A 3
<b>Preso-Matic</b> Sanford, FL Phone 407-324-9933 Fax 407-328-9977					Y	8

A-Training Programs 1-Door Pulls 2-Keyless Access Control 3-Automatic Doors & Door Operators 4-Decorative Residential Levers for Interior Doors 5-ADA Compliant Lever Handles 6-Lever Lock Conversion/Reinforcement Kit 7-Tubular Lever Locks 8-Keyless Entry Locks 9-Keyless Lever Locks 10-Flush Door Pulls 11-Door Pressure Gauges

MINI SECTION

# ADA PRODUCT GALLERY

PRODUCTS MANUFACTURED	MISC.
CYLINDRICAL LEVER LOCKS	OTHER (SEE LEGEND BELOW)
MORTISE LEVER LOCKS	TECH ADVICE TO INSTALLERS
DOOR CLOSERS	EXIT DEVICES
POWER DOOR ASSISTS	

**Rixson-Firemark**  
Charlotte, NC  
Phone 800-438-1951 Fax 800-221-0489

**Sargent Manufacturing Co.**  
*a subsidiary of Essex Industries*  
New Haven, CT  
Phone 800-727-5477  
Fax (orders) 203-498-5544  
Fax (general) 203-776-5992

**Schlage Lock Co.**  
San Francisco, CA  
Phone 415-467-1100 Fax 415-330-5626

**Simplex Access Controls**  
Winston-Salem, NC  
Phone 910-725-1331 Fax 910-725-3269

This guide contains a great deal of information about companies which manufacture products to help you and your clients comply with the Americans With Disabilities Act (ADA).

PRODUCTS MANUFACTURED	MISC.
CYLINDRICAL LEVER LOCKS	OTHER (SEE LEGEND BELOW)
MORTISE LEVER LOCKS	TECH ADVICE TO INSTALLERS
DOOR CLOSERS	EXIT DEVICES
POWER DOOR ASSISTS	

**Trans Atlantic Co.**  
Philadelphia, PA  
Phone 800-523-9956 Fax 800-531-0844

**Triangle Brass Mfg. Co.**  
Los Angeles, CA  
Phone 213-262-4191 Fax 800-637-8746

**Von Duprin, Inc.**  
Indianapolis, IN  
Phone 317-897-9944 Fax 317-899-9302

**Weiser Lock**  
Tucson, AZ  
Phone 800-677-LOCK Fax 800-688-LOCK

**Yale Security, Inc.**  
Charlotte, NC  
Phone 800-438-1951 Fax 800-338-0965

A-Training Programs 1-Door Pulls 2-Keyless Access Control 3-Automatic Doors & Door Operators 4-Decorative Residential Levers for Interior Doors 5-ADA Compliant Lever Handles  
6-Lever Lock Conversion/Reinforcement Kit 7-Tubular Lever Locks 8-Keyless Entry Locks 9-Keyless Lever Locks 10-Flush Door Pulls

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[www.laserkey.com](http://www.laserkey.com)





Doin'  
It

# As far as masterkeying is concerned, you can do with IC cores what you can do with most any other commercial locks.

## WITH BEST/FALCON, PART II

by Jake Jakubowski

Last month, I showed you the external mechanics of Best/Falcon type IC core cylinders and plugs and discussed what makes them attractive from a key control standpoint.

I also mentioned that, basically, you could do anything (as far as pinning and masterkeying are concerned) with an IC core plug that you could do with a Kwikset (or Schlage, or Arrow etc.).

The Best/Falcon IC core cylinders (remember we're only dealing with the A-2 system in this case) can be masterkeyed, grand mastered, sub-mastered and great-grand mastered - if you so desire. The trick is in the way you set your system up.

Because with a Best/Falcon plug you have two shear lines. The first is the primary or operating shearline and the second is the control shearline. Within the parameters of the operating shearline (which precludes Maison type keying), you can do virtually anything you need to do to the core since the system uses a MACS of nine!. However: You must have a proper progression chart worked out before hand.

To prove my point, I'll use a randomly selected six pin keying chart that was not originally developed for IC core work. (See illustration 1.)

Randomly selecting key #44, I pinned an IC core cylinder using that bitting for the operating shearline (NOTE: With a MACS of 9, key numbers 5, 6, 7, 8, 24, 40, 56 and the eighth row master from the top are unusable combinations because they contain a 9-0 combination which exceeds our MACS of 9)

To utilize that bitting array in my IC core system, I next had to determine my control bitting (which operates the control shearline) and driver, or top pin, bitting. To do that, it will be necessary to generate the work sheet and pinning chart. (See illustration 2.)

F	E	D	C	B	A	SOP
1	4	3	8	5	2	TMK
0	6	0	6	0	6	PARITY
3	6	5	0	7	4	
5	6	7	2	9	6	KBA
7	0	9	4	1	8	
9	2	1	6	3	0	

365072

Vertical Master

1365074

2365076

3365078

4365070

Block Master

365072

365274

Vertical Master

1365274

2365276

3365278

4365270

Block Master

365272

365472

Vertical Master

1365474

2365476

3365478

4365470

Block Master

365472

365674

Vertical Master

1365674

2365676

3365678

4365670

Block Master

365672

365894

Vertical Master

1365894

2365896

3365898

4365890

Block Master

365892

365014

Vertical Master

1365014

2365016

3365018

4365010

Block Master

365012

365218

Vertical Master

1365218

2365216

3365218

4365210

Block Master

365212

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Vertical Master

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Block Master

365812

365034

Vertical Master

1365034

2365036

3365038

4365030

Block Master

365032

365238

Vertical Master

1365238

2365236

3365238

4365230

Block Master

365232

365434

Vertical Master

1365434

2365436

3365438

4365430

Block Master

365432

365636

Vertical Master

1365636

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Block Master

365632

365834

Vertical Master

1365834

2365836

3365838

4365830

Block Master

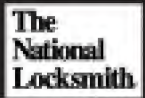
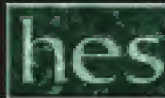
365832

SYSTEM #: BEST/FALCON

PAGE #: 3

MAN/KEY: T-C625 "F"

MACS: 9



Pin Chamber Numbers Read Tip To Bow	6	5	4	3	2	1
Driver Pins	8 — or — .100	9 — or — .112	8 — or — .100	8 — or — .112	12 — or — .150	7 — or — .087
Control Pins	12 — or — .150	8 — or — .100	10 — or — .125	6 — or — .075	6 — or — .075	14 — or — .175
Master Pins	2 — or — .025	2 — or — .025	2 — or — .025	4 — or — .050	2 — or — .025	2 — or — .025
Master Pins					2 — or — .025	
Bottom Pins	1 — or — .122	4 — or — .160	3 — or — .147	4 — or — .160	1 — or — .122	0 — or — .110
TOTALS	23 .397	23 .397	23 .397	23 .397	23 .397	23 .397

### 3. This is what the pin stack would look like in the cylinder.

block master and the change key. Just as any other standard locking system would that was pinned to the chart we used. And, that's with just two pins in each chamber - except chamber two (Remember we're counting from tip to bow) which required two #2 master wafers.

Because the control sleeve at the pin chambers is .125" thick and the A-2 system uses depth increments of .0125" then ten depth increments are equal to the thickness of the control sleeve at the pin chambers (10 x .0125 = .125).

Consequently, to determine our control pin length, we need to add 10 to our arbitrarily chosen control key biting of: 5-4-5-4-1-6 and then, subtract the largest total increment of the combined bottom and master pins (3-6-5-8-5-2) already placed in each chamber. That computation will give us the value of the proper master wafer to operate the control shearline. In our example, our control number is 15-14-15-14-11-16. Please note that the control number will be constant throughout entire system. Subtracting 3-6-5-8-5-2 from the control number, gives us control pin values of 12-8-10-6-6-14.

Now, in order to complete our pin stack for each chamber, we need to determine the length of the driver pin (or top pin) necessary to bring our total in each pin stack up to 23. Remember me mentioning the "Rule of Twenty-Three" last month? That rule says that each chamber will have a combined pin depth value of "23"; or a total of .397".

Once you determine the lengths of the drivers, those values will also remain constant throughout the system - whether it's a system of ten locks, or one hundred and fifty.

So in pinning my IC core plug to key #44 of the master key chart allowing all of the keys I mentioned above to turn the plug, I wind up with a single core pinning array that would look like this: (See illustration 2.)

BOTTOM PINS	1	4	3	4	1	0
MASTER PINS	2	2	2	4	2	2
MASTER PINS					2	
CONTROL PINS	12	8	10	6	6	14
DRIVER PINS	8	9	8	9	12	7
TOTALS	23	23	23	23	23	23

Illustration three shows the above pinning array in both pin numbers and thousandths (rounded off to the nearest .001") of an inch increments.

If all this charting seems a bit too much work to go through to generate a pinning chart for IC core cylinders, there are other ways to go. For instance several companies offer computer software that will whip out a pinning chart in a hurry.

Falcon offers their Interchangeable Core Pinning Chart (Form #0128, available from your favorite distributor for about \$6) and Don O'Shall's Guide To Interchangeable Core Cylinders

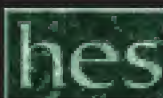
*Continued on page 55*



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4. Using a pin ejector to remove the old pins.



5. Using a pinning block to make repinning easier.

#### Continued from page 52

(The National Locksmith, \$34.95), shows a speed chart on page 29 for working out an A-2 pinning chart.

However, I strongly urge you to develop a system or two using the above illustrations as a guide to develop a sense, or feel, for the way the system works. It's good training and you never know when you might need to generate a system on the spot and not have access to your computer.

Also, the possibility is very real that you would need to originate a key for an existing system and all you had to work with would be the control key and master key. With those two keys and an understanding of how to "do a chart," you could originate another key. True, it may be a "ghost" or an incidental master but - you could make a key and pin the cylinder if you had to. Of course, it's always best to have a biting list available - which it usually isn't.

O.K. Let's pin a plug according to the above and see what happens. First

off, if you're going to do IC core work you should have a capping block. A-1 Security puts out one for about \$70. that's a real handy work station for IC core work. In addition to holding the plug steady while you're keying it, the Capping Block (TB-2) has two different caps, which allows you to cap Best, Falcon, Eagle and Arrow cylinders.

**T**he first step to pinning (or repinning) an IC core plug is to make sure that all the old pins are ejected. You can do this by inserting a pin ejector through the access holes at the bottom of the cylinder. (See photograph 4.)

Place the empty cylinder in a capping block and turn the plug 90°. (See photograph 5.) By doing this, all the pins will rest on the plug and be easier to see during pinning. If I have pinned the core properly, each stack will be at the same height. If I have mispinned a stack, it will show higher or lower than the others. Since each stack is .398" high (Remember: The Rule of Twenty-three!) each stack has to be even. (See photograph 6.)

After I am certain that I have pinned each chamber as specified in the pinning chart, I insert the springs, hold them down with my finger and try the keys before capping the core.

Photograph seven shows the capping block in place and Best style caps ready to be set. Once in place, the cap driver is used to set the cap into place in the core. (See photograph 8.) Photograph nine shows a completely recombined core.

Of course, central to any program that you want to develop with regard to offering IC core service is a good code machine. If you don't have a means of generating first keys by code, then I don't recommend that you start servicing IC cores.

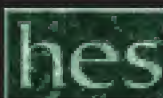
If you have a HPC 1200 or Framon code cutter you can originate IC core keys on them. Another alternative are the specialty key machine for IC core key cutting such as the Framon IC234 and the A-1 Security PAK1 Pack-A-Punch. In April's issue I'll deal more with the various machines (Photos,



6. When properly pinned, the stack height of each chamber will be equal.



7. Ready for capping the chambers.



**8. Setting the caps.**



**9. The completed cylinder.**

evaluations and suggested list prices!). Suffice it to say: You need a good code machine to do competent IC core work.

So, how do you get into IC core work? First, you need to learn as much about it as possible.

Next, you have to find IC core business. By that I mean, you need to look for opportunities to upgrade an apartment complex, factory or office building from their current masterkey system to an interchangeable core

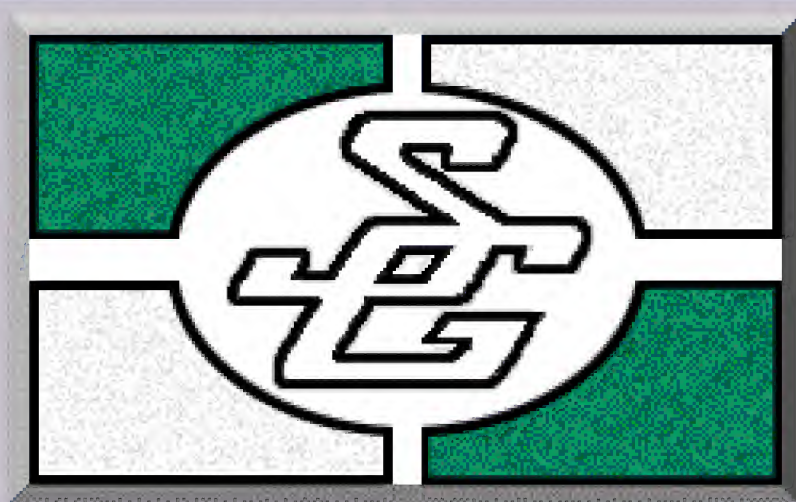
system. Fast food outlets with multiple locations and high, rapid, personnel turnover are good prospects.

I know of one locksmith that sells all of his commercial customers (even small one shop mom and pop stores) on IC core cylinders and cores for key control reasons.

And, finally, you need to be willing to invest in equipment, inventory and key blanks that enable you to service the IC core work you generate for yourself.

In a later article, I will get into bypassing IC core locks and how to determine the pinning configuration of an IC core lock that you did not install.

See ya'll next month with some exciting padlock information, including an interview (Photos too!) with a fella' that jes' might have one of the most exclusive private padlock collections ya' ever did see! Come see me - ya'll heah?



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# BUSINESS BRIEFS

## News from the Locksmithing Industry

### INDUSTRY INTERVIEW...

Recently, our writer on the run spoke with President and CEO of ASSA High Security Locks, Inc., Wayne Wilkerson.

*Mr. Wilkerson, how were you introduced into the field of high security locks?*

While attending college, I became acquainted with the son of the founder of Medeco Security Locks. In 1970, I had the opportunity to meet Roy Oliver, at his home in Salem, Virginia. At that time the Medeco Lock Company was in it's initial stages of start up, and starting to develop it's product line. Upon graduation from East Tennessee State University, I went to work as Merchandising Manager for Consumer Products for Moores Super Stores, a building supply chain operating out of Roanoke Virginia with 86 stores in 11 states.

Among my responsibilities was hardware procurement and merchandising. At that time, Arrow Lock Company was our major supplier! I will never forget the first opportunity I had to meet Ernie Pugatch, the President of Arrow. Ernie had a very special relationship with the Marketing Directors of Moores.

In 1977 I received a call from Ron Oliver, who had finished college and joined his dad at Medeco. I was quick to accept a position, and stayed with that company for the next 11 years.

In March of 1988, I accepted a position with ASSA High Security Locks, Inc. located in Downers Grove, Illinois. ASSA was facing many challenges in order to be successful. It was a special time in my life, as well, and I, also, needed a challenge.

After relocating the company to reduce overhead, the next decision was the most critical. In order to survive, the decision was taken to eliminate the top management echelon, and promote the second level. By taking this action, we created what I consider to be one of the most devoted management teams in the industry today. Not only are they devoted, they are efficient, goal oriented, and extremely sensitive to our customers needs.



**Wayne Wilkerson**  
President and CEO  
ASSA High Security Locks, Inc.

This small group of highly talented managers, has been able to bring this company from huge losses just six years ago, to one of the top performing companies within the ASSA-ABLOY world wide group.

*Mr. Wilkerson, what is it that you enjoy most about this industry?*

I must say that the most enjoyable aspect of working in this industry has been seeing the development of the high security cylinder segment and contributing to the marketing programs that affected its growth. Its not all that often that something so dynamic can be followed from such a close perspective.

*Having been involved in the security industry for so long, what are the most notable changes that you have witnessed?*

The most notable change within our industry, that I have been able to observe, has been the changing role of the Wholesale Distributor. Today, the successful distributor has evolved into a full scale marketing company. The small independent distributors who, in the past, relied on a close personal relationship with a select group of accounts, are rapidly becoming a thing of the past. More than ever before, distributors are national in scope, and perform a comprehensive list of value added services. These additional services directly affect the locksmith. Many still have those close relationships.

As the wholesale distributor grows in marketing savvy, it is most effective for them to target those dealers where, with the proper follow up, growth will occur. Examples of this can be seen in all of the major wholesale distribution programs where additional incentives are offered to dealers who subscribe to a larger array of these value added, sales enhancing services. The primary objective is "specialization" in an industry where price is no longer the major factor.

Locksmith Security Professionals are, more than ever before, joining forces with the Wholesale Distributors in a partnering relationship. It's a must in today's business environment. In order for the locksmith to be successful, they must do two important things. First, they must seek out and find educational courses that elevate their professional skill and knowledge.

**Janco Security** announces the sale of their product line to **Major Manufacturing Inc.** Major Manufacturing will continue production of Octopod, AlumaGuard and Max High Security Strike Plates. We are sure that Major will continue to provide you with the quality products and fast delivery you require. For more information please contact: Major Manufacturing, Inc. P.O. Box 788 Atwood, CA 92601, 714-772-5202, Fax 714-772-2302.

**RoFu International Corp.** has moved its operations. The company's new address is 2004-B 48th Ave. Ct. E., Tacoma, WA 98424, phone (206) 922-1828, fax (206) 922-1728. The company's toll-free number remains the same, 800-255-ROFU.

The **LIST Council** is pleased to announce that it has finalized an agreement with **Pine Technical College** for the presentation of the certified training classes MK101 and MK102. The first and only certified training classes offered to the lock industry will be included as part of Pine Tech's newly established extension program. Pine Tech's extension program plans to make class presentations for the lock industry on an international basis

using locations throughout the world.

For information regarding the scheduling of classes or to schedule a class presentation, contact Tom Freehling, CML, Pine Technical College, 1000 Fourth Street, Pine City, MN 55062, 800-521-7463.

**Renee' Katherine Cook** of Fenton, Michigan has been named an inside sales associate for **Safety Technology International, Inc.** of Waterford, Michigan, it was announced by **Lori Lynn Taylor, Vice President of Sales and Marketing.** STI is a recognized leader in the security/ fire alarm field and makes more than 40 products worldwide, including its unique and patented Stopper® II that helps stop false fire alarms.



**Renee' Katherine Cook**

**Silca Keys, USA, Inc.** is pleased to announce the appointment of the following sales representatives: **Herlo, Inc.**, 73 Main Street,

Woodridge, NJ 07095, serving Metropolitan New York; **Buckley Sales Co.**, 17 Prince Henry Court, Marlton, NJ 08053, serving Middle Atlantic Region; **EJD Associates, Inc.**, 5 Trowbridge Circle, Rowley, MA 01969, serving New England.

The addition of these sales organizations has been designed to further strengthen the bond between Silca and the locksmith.

**DynaLock Corp.** has begun construction on Phase 1 of its new 20,000 square foot manufacturing facility located at 705 Emmett Street in Forestville, CT which is scheduled to be completed in January 1995.

This expansion will consolidate sales, service, and manufacturing to more efficiently accommodate present demand for DynaLock's line of electric security hardware and allow for future growth.

**So-Cal Lock & Supply** has moved to a new location. Their new address is 2104 Wilson Ave., Suite C, National City, CA 91950-6542. Their phone and fax numbers have remained the same. Phone is 619-474-8847 and fax is 619-474-2440.



### ...INDUSTRY INTERVIEW (continued)

Second, they must direct their businesses toward more specialized products and services. Products that cannot be compared or judged by what the mass merchants offer. As an example, if a locksmith security center sells a Schlage F Series lockset, it should be displayed in their retail area with a MAG or Don-Jo door accessory. This gives the customer a different view of the product, and suggest that more is available in the way of products and service.

It would also be a good idea if the locksmith security center displayed a variety of "combinations" of products. This projects a more professional image and speaks directly to the customer about added value through product knowledge. There is one more suggestion that might be of benefit. Why not shop the local

retail competition, especially if it is in close proximity to your location, and find out what popular products you both carry. Chances are it will be residential locksets of one or more manufacturers. Take those two locks, display them in your retail area, and price them at or below your competition.

This is a common merchandising approach and is used by Sears still today.

If the customer has shopped your competitor, and is familiar with the prices, it's a perfect opportunity to sell the customer up to the next grade. Even if you loose money on the few that you sell, at or below cost, you will easily make up the difference on the ones that you sold at a higher price (and profit)!

*What's your vision of tomorrow's locksmith?*

Tomorrow's locksmith security professional will be a different breed of cat. They will be more educated in

the products and services they sell. They will handle more sophisticated products that require a greater degree of skill to install and service. Employees will be ranked and compensated by their level of skill, and evidenced by the certificates of course completions and Proficiency Certifications that are currently offered by most manufacturers and the Associated Locksmiths of America.

However, it will not only be the independent Locksmith Security Professional that will acquire these skills, for the local mass merchants will employ these skill levels as well. It is therefore important that the Locksmith Security Center offer a comprehensive employment package that is competitive with that of the mass merchant. The owner should make it his or her business to find out what that package is, and how to keep their employees happy.





# LIGHTER SIDE

## No More Mr. Nice Guy?

"You know, sometimes it seems like the more helpful I try to be, the worse trouble I get myself into," Don said one afternoon at the store.



by  
**Sara Probasco**

An irate customer had just departed after expressing displeasure that a "freebie" privacy lockset wasn't functioning as smoothly as he thought it should. On impulse, a couple of months back, Don had tossed a few used, reworked locks and hardware sets into our bargain bin, priced at a dollar or two each. That was a mistake.

The customer in question had been carefully counting his pennies over having a key made. When he had hesitated longingly at the bargain bin, but seemed reluctant to pay even the small asking price for a lockset, Don's benevolent nature kicked into gear. He shrugged, thought, "What the heck," and gave the man a couple of locksets free of charge. That was another mistake.

"I guess I should have left well enough alone and kept those reworked locksets for the paying customers," Don later lamented to a lawyer-friend of ours over coffee.

"You should have tossed the old locksets into the trash," the lawyer replied firmly. "What if you give or sell one of those old pieces of junk to somebody, and it were to malfunction? Say, somebody suffered loss or injury as a result."

"What kind of loss or injury?" Don asked.

"Anything. Say, somebody jimmied the lock and burglarized their apartment, or they suffered assault or rape. Say, they couldn't get the lock to open, and they were trapped inside a room or in their apartment, and they suffered trauma as a result. Say, they

were trapped in a fire situation. Make it simpler: say, they couldn't get the lock open to get into their apartment for some important work papers, and they lost a big account because of the delay. Anything like that, these days, you got a law suit on your hands. And believe, me, you can't afford it.

"Did I ever tell you about the time...?"

Our friend went on to relate a couple of stories about clients who had been sued unexpectedly over seemingly trivial matters, but Don's thoughts had wandered into other areas.

When he returned to the shop, he headed straight for my office.

"Honey," he said sternly, "you wouldn't believe the horror stories Jim was just telling me. We've got to quit giving things away."

"What do you mean?"

"No more Mr. Nice Guy, around here." He started plundering through the book case and desk drawers in his office.

"Can I help you find something?" I asked.

"What did I do with that book Joe sent me?"

"Which book is that?"

"Why S.O.B.'s Succeed and Nice Guys Fail in Business. I've decided maybe I need to read it, after all."

"Oh, come on. You don't want to run your business like Scrooge. Remember what eventually happened to him," I reminded him.

"But Jim is right. Remember the customer we sold those holding safes to?"

"The one with all the convenience stores?"

"Right. Remember, he stored money in one of them overnight, and a burglar broke in and took it?"

"But, Don, that wasn't your fault.

You had warned him the safes weren't burglar-proof when he purchased them. Then you had helped him mount them for best protection. After the break-in, you even took the burglarized safe and pointed out a manufacturer's defect that had caused the problem."

"Yeah. Mr. Nice Guy. So, what did he do? He turned right around and had his lawyer threaten a law suit against me for selling him defective merchandise. Remember?"

"But nothing ever came of it, as far as we were concerned. The manufacturer made good his losses, and we were never directly involved," I pointed out.

"Only because our insurance didn't cover that sort of out-of-our-hands liability. If we'd had healthy coverage in that direction, do you think he and his lawyer would have let us off the hook?"

I didn't know what to say about that. I was remembering the anxiety we had both felt for weeks, over the matter. I also remembered the hostility we'd had to overcome, regarding that customer's denial of any cautions or limitations we had expressed to him at the time he had purchased the safes. All too clear in my memory was his willingness to shift responsibility for the matter off his own shoulders and onto ours.

"Well, at least that taught us something. We now have a disclaimer form for purchasers of safes to sign that protects us against such situations in the future," I pointed out.

"And I want you to think of something else, while you're deciding to quit giving things away" I said. "Your new policy would include the 'freebie' car openings I suppose. Are you willing to stop opening vehicles free, when children are locked inside, or no longer open a vehicle 'gratis' for someone who needs help, but truly

*Continued on page 116*

See You in Anaheim!  
February 14, 15 & 16, 1995

# The National Locksmith®



A Supplement to

**ISC  
WEST**

**February 1995**

**Anaheim  
California**

The National Locksmith

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When All Else Fails...  
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# WELCOME TO THE SHOW!

This special supplement of *The National Locksmith* is devoted to educating you, the security professional, about the security products on display at the ISC West Show in Anaheim, CA and to help you profit most from the highly lucrative security industry.

Manufacturers and distributors, including some who have advertising in this section, are on hand to demonstrate their products. They are offering you the opportunity to learn about the newest and best products available from the security industry.

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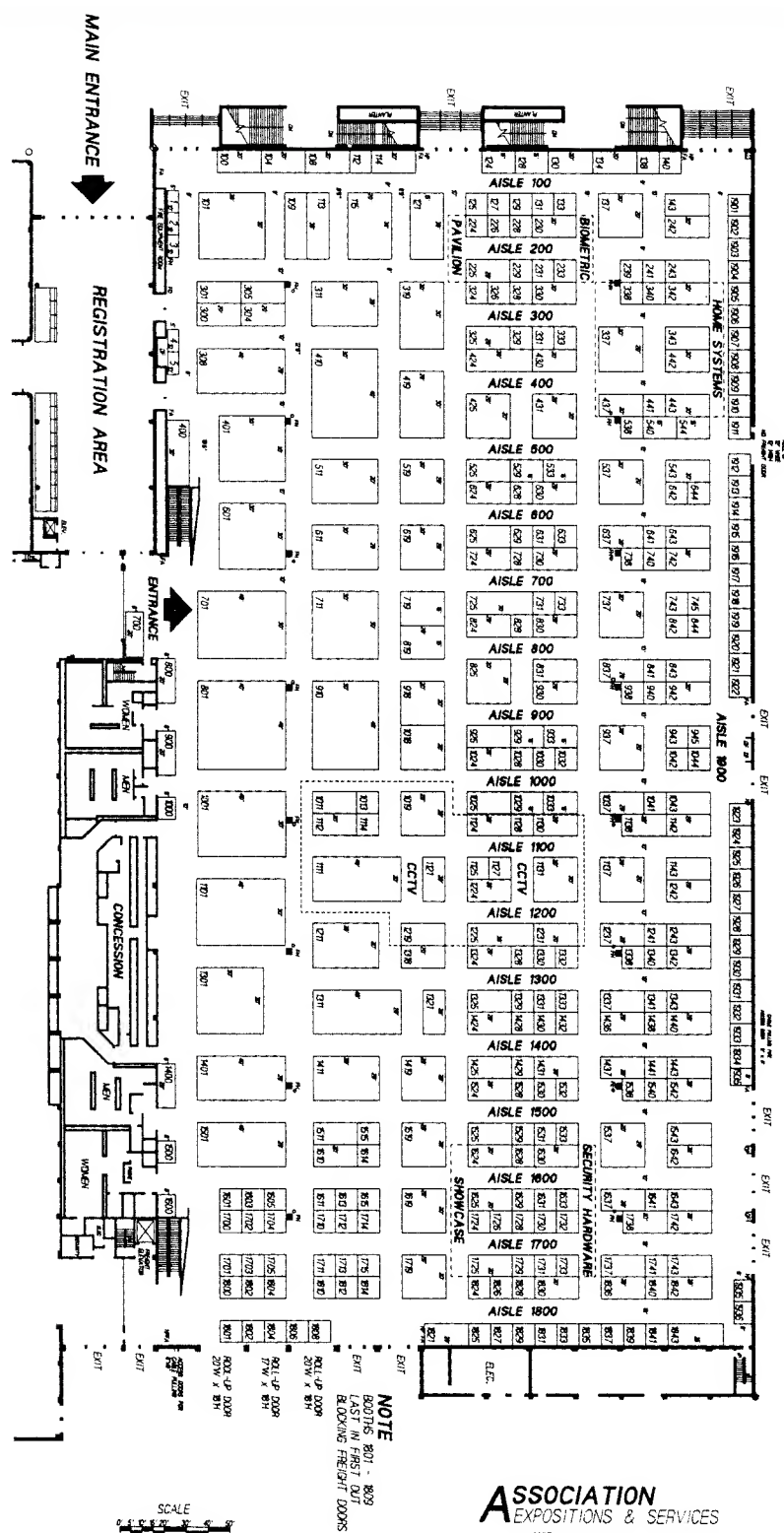
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**1. Today, your customer can be offered a variety of access control units to fit their need and budget. Stand alone units ranging from the fully mechanical to a full blown audited system are available to the locksmith. The photograph above includes the fully mechanical Keylex 2000 by Door Systems, Inc.(center); the Trilogy by Alarm Lock, offering multi-user capability (right); and the Microkey by Winfield, offering multi-users, masterkey style control, multiple time zones or windows.**

## THROUGH THE FIRST DOOR OF ACCESS CONTROL



by  
**William  
D. Heine, Jr**

**Knowledge is power,  
so don't be caught  
unprepared.  
Empower yourself  
by understanding  
the basics.**

**R**esults of a recent survey conducted by a major high security lock manufacturer indicate that the vast majority of respondents would readily accept the advice of a locksmith regarding all forms of physical security. This public perception of locksmiths as security professionals makes it incumbent upon each of us to stay abreast of the latest trends in the industry.

Access control is perhaps the fastest growing sector of our industry, as evidenced by the continuing development of a wide variety of these systems. Increasing concerns about violence in the workplace and insider theft have made access control a top priority in many businesses. Your ability to work through access control

issues with your customers and recommend solutions which are both reliable and cost effective can result in highly profitable sales, installation and service agreements.

The term "access control" is generally used to describe a system which limits access to a building and/or helps control movement between areas within the building. Access control systems are designed for use as one component in a layered approach to site security planning. They are not normally designed to withstand aggressive attempts at forced entry, since their primary function is auxiliary movement control during the hours when a work area is occupied. With systems currently available for almost any need and



**2. Different technologies optimum application. The Nel-Tec access control system (bottom) is a single door unit that utilizes a keypad input device. Corby (top) offers both single and multi-door systems and a range of input devices including, keypad, card and data chip.**



budget, balancing three factors to achieve optimum results is what will be required of you as the security specialist.

**F**irst and foremost is to determine your customer's desired result in installing or modifying facility access control. This will likely be based upon the customer's perception of the threat to information, property and personnel at their facility. In your initial discussion with the customer, review major areas of concern and be sure to identify other potential threats which may not have occurred to the customer. Your risk assessment should include both internal and external threats.

Second, identify the type of system desired. This will be impacted somewhat by the threat(s) identified during your risk assessment. Other factors include physical layout of the work environment to be protected and the routine activities which occur there. An access control system should provide the desired level of security while causing minimal delays in movement for authorized users.

Evaluation criteria for access control devices normally take three

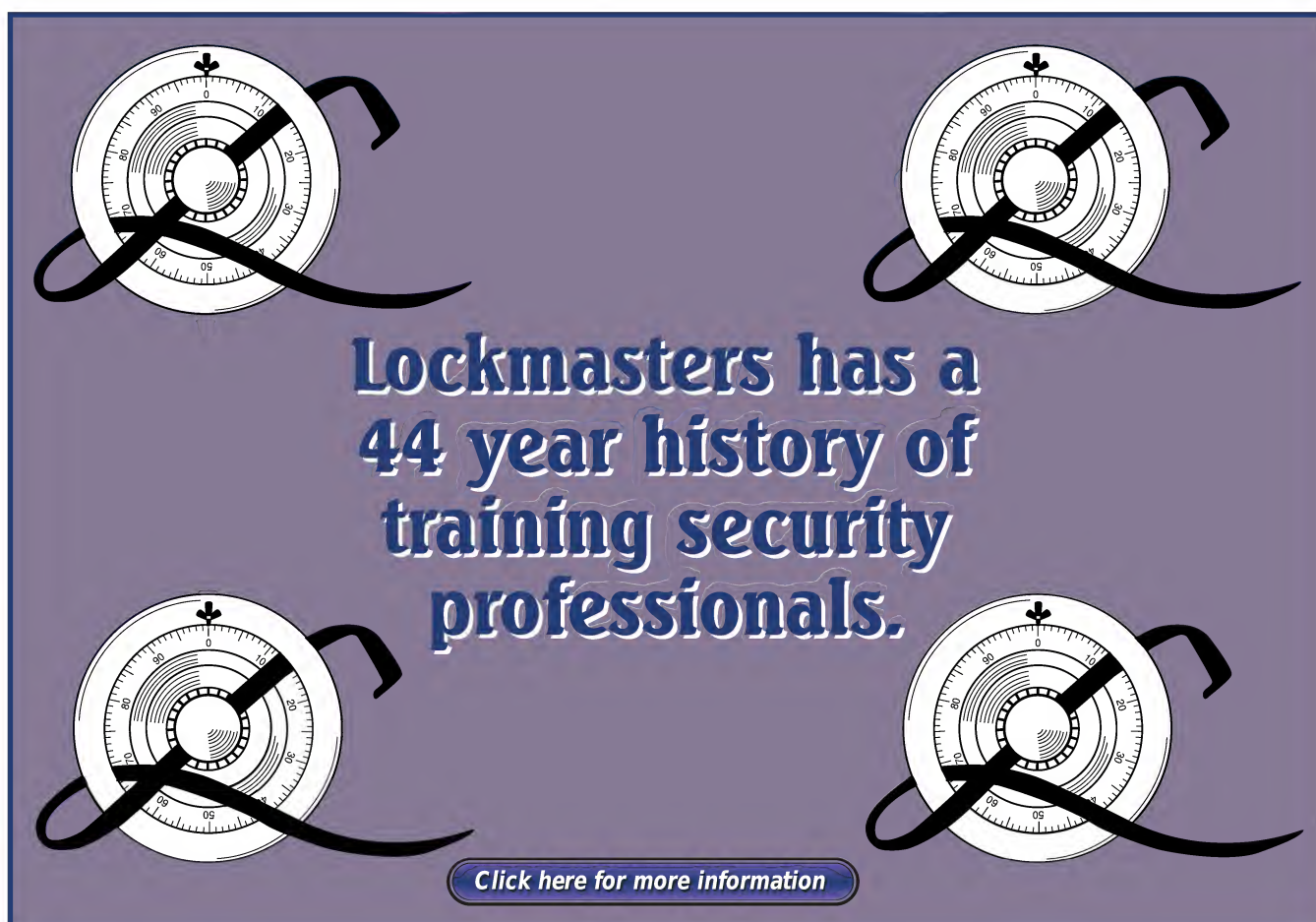
factors into account. Thru-put is the average amount of time required for an authorized user to gain access using a specific system. Short thru-put times are the goal. False Acceptance Rate (FAR) is the rate at which a system allows access to unauthorized users (normally expressed in terms of x number of times out of a million). Low FARs (>1:1,000,000) are achievable. False Reject Rate (FRR) is the rate at which a system denies access to authorized users. Low FRRs are also good. An extremely low balance between FAR and FRR is the desired goal of most system designers, since zero in either category is not realistically attainable. Each of these three factors (Thru-put, FAR and FRR) can be adjusted by the system manager, but the three are inextricably linked and any attempt to adjust one will affect another.

**A** balanced appraisal of facility requirements and the standings of particular systems with regard to the criteria outlined above will help narrow the group of systems you can suggest for installation. After providing a brief overview of available features and operating characteristics, you can use

customer feedback to focus on a specific system or group of systems.

Input to access control systems (other than conventional key or combination locking devices) can be digital, card based, via hybrid credential or biometric. In some instances two forms of input are required such as a personal identification number (PIN) used in conjunction with card or biometric input. These input variables are commonly categorized as "what you know" (combination or PIN), "what you have" (card or hybrid credential) and "what you are or do" (biometric).

Digital systems may be either mechanical, electro-mechanical or electronic in operation. These systems can operate as stand alone units or be incorporated in a multi-unit, on-line system. The simplest digital systems offer no audit capability. All employees gain access through the use of a single common combination entered via pushbuttons or a keypad. With more advanced micro-processor based electronic systems features can include separate PINs for each user, audit capability, selective access, anti-passback operation, duress signaling and system self-diagnostics. The



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major benefit of digital systems is relatively low cost, credential-free access control. (See photograph 1.)

**T**he common feature among card based access control systems is that each typically requires use of a credential which is similar to a standard credit card in size and appearance. These are perhaps the most readily accepted systems. Readers for these systems come in insert, swipe and proximity varieties. Information is encoded in material either embedded in or applied to the surface of the card.

Formats available include standard barcode and magnetic stripe; barium ferrite (magnetic spot), optical/infrared, proximity (tuned circuit), Ving (holes) and Wiegand (specialized wire). Photographic and signature identification can also be incorporated into card type credentials. Many card based access control systems are capable of offering all the advanced features available in a high end digital system. Systems have recently become available which allow any standard magnetic stripe card already in the user's possession (i.e. a credit card), to be programmed with

access control data. The major benefit of card based access control systems lies in the system manager's ability to program users into and out of the system quickly, normally from a central location. A number of recently developed access control systems use credentials which do not fit neatly into a specific category. Readers for these systems range from devices which appear to be standard mortise cylinders, to wands and proximity units. The hybrid devices themselves take many forms. Standard cylinder key look alikes, plastic tags and metal disks are a few examples. All of these credentials are programmable and can offer the advanced system features previously discussed. Their benefits range from ease of integration with existing hardware to increased memory capability. (See photograph 2.)

**B**io metric input in its many forms, is a relatively recent arrival on the access control scene. Biometric access control systems record, recall and compare measurements of a specific individual physical characteristic or behavior; such as finger/palm prints, hand geometry, retinal vascular patterns, signature dynamics or voice components.

Research and development efforts on a number of other systems continues at a rapid pace. Biometric input devices typically offer low false acceptance rates. Some can also be programmed for two person integrity. Since no hard credential is required; security against loss, theft or duplication of the input device is inherent.

Regardless of the category of system selected, close attention must be paid to associated locking hardware (bolts, hinges, latches, magnets or strikes). The quality of the decision making components in an access control system will mean little to your customer if locking components can be easily defeated.

The third and final factor you must include in the planning phase is your customer's budgetary limitations. In the world of access control cost does not always equate to quality or number of advanced features. In these fiscally conservative times, your familiarity with the features available in particular systems will enable you to provide your customers with the most "bang for their buck." This, combined with reliable operation and speedy service will insure long-term success in your customer relations.



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# WHEN ALL ELSE FAILS...

by William D. Heine Jr

***It is critically important when confronted with a lockout, that we not let preconceived notions affect our ability to solve the problem.***

**M**ost locksmiths who've been in business for more than a day or two can describe at least one instance where all attempts at non-damaging bypass of a security system have failed. Since we are often called upon to service security systems for which no valid credential (key/ card) or combination exists, the likelihood of this occurring is great. Additional factors such as damage caused by vandals or thieves can complicate matters.

The problems encountered can range from our simple inability to pick open a key operated cylinder or manipulate a combination lock; to damaged, inoperative system components. Cyanoacrylate (Super Glue) and other substances are sometimes used by vandals to obstruct slots and keyways, rendering locking mechanisms useless. (See photograph 1.)

Unskilled thieves often attempt to force a keyed cylinder into the unlocked position by inserting a screwdriver into the keyway and applying turning pressure. Partially inserted keys broken off in keyways can also be bothersome. Any of these situations can make insertion of lock picks difficult, if not impossible. Broken operating handles and doorknobs present their own set of problems. Other system components such as latches and wiring may also be damaged during break-in attempts. Fully functional combination locks with lost combinations are seen frequently. (See photograph 2.)

Over the course of time we develop a repertoire of techniques for dealing with these situations. Some of our trade journals offer monthly advice in this regard, and our personal contacts with colleagues often yield solutions to these tricky lockout situations. It is critically important when confronted with a lockout, that we not let preconceived notions affect our ability to solve the problem.



***1. Even the simplest of non-damaging openings is impossible if the lock being worked on is damaged or has been vandalized.***

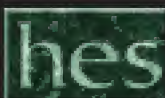
Perhaps due to a false sense of personal pride or our view that forced entry is unprofessional; we often overlook avenues for gaining access which can be both minimally damaging and cost effective. Keep in mind that in all instances, time is money. This is true for both you and your customers. With this in mind, the use of forced entry techniques to bypass damaged or inoperative security systems is something you may want to consider more readily.

A prime example is the novice who spends time picking open and fitting keys to inexpensive padlocks. Shimming, rapping and shackle busting these locks is the preferred opening method in most instances. Charges for more involved work usually exceed both the cost of the original and its replacement. (See photograph 3.)



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**A**n additional factor in exploring the utility of various forced entry techniques is that you become more skilled at planning defenses against these attacks. This knowledge can prove extremely useful as you advise your customers on site security planning considerations.

Completely disabling an already damaged or inoperative system is rarely viewed as unprofessional, especially if no damage is done to the area surrounding the locking device itself. If you're still not convinced, put yourself in the customer's shoes. Would you rather have the security

professional you hire waste time in an ineffectual attempt to gain access through conventional, non-damaging means; or have that same person efficiently force entry and perform the necessary repairs quickly so that no evidence of the entry is apparent? I have personally



**2. With the increasing use of electronic locks, surreptitious entry may not be feasible and/or profitable.**



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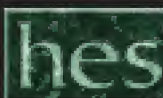
used the second option to good effect a number of times. The situations have included inoperative vault locks, auto ignitions and business/residential locksets. On many occasions I've been able to force entry without causing any damage whatsoever.

Security systems, be they simple mechanical locks or advanced electronic access control setups, routinely require authority to accomplish programming or alteration. In most instances this authority consists of cards, codes or keys which allow the system manager to gain access to the inside of the protected area and the back side of the system.

Any scenario which calls for you to bypass an inoperative or damaged security system in order to repair or replace it should begin with an inspection of the entire perimeter or outside of the container the system protects. In many cases, an alternate route of ingress such as a trap door, vent, window or roof access hatch may provide an alternate way to gain access to the interior of the protected area. A quick inspection should be conducted regardless of information provided by your customer, since the customer may not be aware of all means of access.

If a forced is required, your advantage will be your detailed knowledge of the system involved. In a standard U.S. installation, non-hardened pin tumbler cylinders can be drilled at the shear line. The drill bit used need only be as large as the diameter of the pin tumblers being attacked. Hammer blows to weak system components such as low grade latches and bolts are often effective. Non-pinned external door hinge pins can easily be lifted with a screwdriver or punch; and a small hammer to





**3. In many cases, it's smarter to destroy and replace the lock than it is spending the time to pick it or make a key for it.**

facilitate the removal of a locked door.

Either a commercial hydraulic jamb spreader or standing car jack can be used to spread door frames far enough so that latches and bolts can clear their associated strike plate.

On aluminum store front or residential screen doors, a large screwdriver is all that's needed. Padding the door frame with a rag prior to beginning will often provide for a completely non-destructive forced entry with no telltale marks left in the area surrounding the lock.

Spring loaded latches which are not equipped with a dead latching mechanism, and incompletely thrown deadbolts can be "jimmied" clear of the strike plate with any thin, stiff tool. A linoleum knife is ideal. This technique works exceptionally well where improper installation or door sag results in a wide gap (hence limited latch/ bolt clearance) between the door and frame.

"Loiding" (pushing a thin, stiff piece of material such as a credit card against the curved side of a spring loaded latch) can also work well in these situations.

A "Pop-A-Lock" type tool or dent puller can be screwed into the keyways of disc or wafer tumbler plugs (including the GM sidebar) and used to pull them free from their surrounding cylinders. A hacksaw blade can be used to saw through some exposed deadbolts.

Careful application of a pipe or specialized cylinder wrench to rim latches and deadbolts (not equipped with a protective free spinning collar) will often rotate the cylinder far enough so that its tailpiece will withdraw the locking bolt or latch.

These are but a few examples. With

a little care, the amount of damage caused can be minimized. In all instances repairs (when necessary) can be effected quickly.

Occasionally, the container or structure of the protected area's perimeter must be attacked. Many times the structural component to

which the locking hardware is attached will be the sturdiest. In a situation such as this, you might consider breaching in an adjacent area. Abrasive cutting wheels, torches and sledge hammers are all options which may not be as outrageous as they might appear at first glance.

One highly experienced safe and vault technician related the story of an emergency bank vault penetration to me in 1987. In this instance, an employee was locked inside a vault equipped with a massive, multi-bolt door to which time combination locks were attached. The

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attached. The employee was unable to locate the inside door release and was likely to run out of air prior to the next activation window for the combination locks. Due to his familiarity with the formidable hardware involved, this technician chose to breach the reinforced cement block wall adjacent to the vault door with a sledgehammer and cutting tools. This entry was simple, relatively quick and less expensive to repair than a penetration of the door. Your customers should be able to rely upon you for the same type of informed decision making. Sometimes knowing what cannot or should not be

done is just as valuable as knowing what we can do.

Be sure to maintain your customer's confidence and comfort levels by briefly describing the factors which necessitate your intended course of action. Offer alternatives. Cover the likelihood and extent of damage; and the repairs that will be required/performed.

When confronted with tough lockout situations, insure that you perform a total and well balanced appraisal prior to any attempt to neutralize the lockout. When more conventional means of neutralization fail, or you determine that the bypass may require extraordinary effort, remember to consider forced entry as an option. You may be surprised by the results. Used judiciously, these simple techniques can translate into effective time savers which help minimize your on-site time. This critically important if you share my view that one of the best places to be in life is heading from one money making opportunity to the next!



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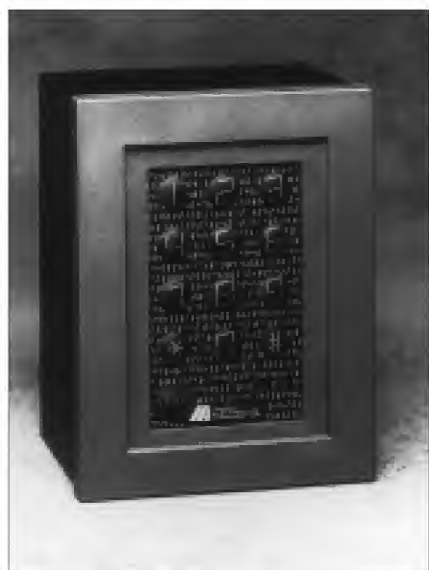


# PRODUCT SHOWCASE

## DigiLock 1™ Electronic Access Controller

The first production run of the world's most secure one-door access system is virtually sold out and orders are mounting for the second run.

The first and newest member of the MICRO\*TRAC family of security systems, the DigiLock features: built-in keypad for programming, one supervised door input, 500 users (250 dual, code + card), and a 800 event buffer and serial printer support. Other features also include user duress and code-tamper, and entry only or entry and exit readers (each reader may be ScramblePad® only, card only, dual technology, or any combination).



The DigiLock 1 is easily programmed using Hirsch's unique Digital Command Language. A series of simple numeric commands are entered on the DL1's built-in keypad to add, change and delete users or change system setups.

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## InteLock's Digital Deadbolt

The InnerKey digital deadbolt by InteLock provides security and peace of mind. This state-of-the-art home



lock system combines a personal code chosen by the homeowner with a simple turn of the code ring to the right and left which serves as the invisible "key". The InnerKey puts an end to accidental lockouts, hiding keys, loaning keys to others or fumbling for keys in the dark. It installs in minutes like any conventional deadbolt. There are 10,000 personal code possibilities that will thwart any attempts to guess the correct one. Additionally, there is a tamper alarm which will sound for 15 seconds and scare away any potential burglars. The alternate codes lets you admit others temporarily without revealing your personal code. InnerKey is ruggedly designed to withstand break-in attempts and was tested in hundreds of hours of rain, heat, and cold. This "smart" lock even alerts you three months in advance to replace the battery and includes a one year warranty.

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## ClikCard Transmitters By Sentex

Prices have just been lowered dramatically on ClikCards, Sentex's access control technology that combines the convenience of radio transmitters with the security of programmable card access. This price reduction (over 30% in some cases) makes this exciting product affordable for almost any gated entry.

ClikCards are radio transmitters that act like cards. As a radio transmitter, ClikCards can be used to open a gate from up to 200 feet away and without opening the car window on rainy or snowy days. As a card (but unlike a standard transmitter), Clik Cards can be made invalid in a matter of seconds - without bothering any of the other users - if one is lost or stolen. Its use can also be restricted easily by day and time as well as by entry point.

These transmitters (and the associated receivers) are also available in the standard 26-bit Wiegand format so that they may be used with almost any access control system available today.

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## Securitron Updates For UL Listed Systems

Securitron announces an update to its two UL listed systems for immediate and delayed egress.



The listing XP-1 now incorporates the new design TSB-3 touch sense bar, either the Model 32 or Model 62 Magnalocks and our BPS Series Power supplies. The modular system allows for immediate egress while working flawlessly with all access control systems.

The listing EXD-1 now includes the above products and the new XDT Series exit delay electronics. The XDT series replaces the TDM series and allows easy compliance with all U.S. and Canadian building codes without

expensive electronic modification.

The EXD-1 will allow an individual to exit an emergency door after an irrevocable 15 or 30-second delay while an audible alarm sounds. The exit alarm resets by a mortise key switch or door contact switch depending on the Fire/Life safety code followed by the local jurisdiction. Unlike electromechanical locks that block the exit, the EXD-1 system uses no moving parts to secure the door. Changes in building pressure or attempts to "rattle" the door from the outside will not trigger the system alarm, thus eliminating false alarms and improving security.

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### **New Low-Cost Keypads From Domino**

Taylorville, Illinois December 9, 1994...Domino Engineering Corporation has announced two new additions to their line of keypad products, especially designed for the



Locksmith Industry. These keypads offer the professional locksmith an additional profit-making opportunity, as well as security and convenience for their customers.

The Garage Door keypad is a stand alone unit, compatible with any garage door opener. Easily installed within minutes, the keypad attaches to the garage door opener with just two wires. Features of the Garage Door keypad include: easy programming, lighted keypad for nighttime user, personal user code, and weatherproof design.

The Security keypad is used in conjunction with electric door strikes, alarm bypass and other security applications. Moderately priced, this indoor-outdoor Security keypad can be used for one code entry or multiply (up to 20 users) codes. Other features include: EEPROM Memory, variable output timing, keypad or manual switch code programming and dual color LED indicator. Power requirements is 12 or 24 volts.

Both keypads are weather resistant and carry a five year extended warranty.

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# the "TEMPLANATOR"



by  
**Dale Libby**

In this article, Dale discusses an old "friend" from Strong Arm Tools as well as a new system to pull those diabolical LaGard combination dials.

At last, a new template system that even I can use!!! I call it the "TEMPLANATOR" from Strong Arm Tools, those makers of the Strong Arm Carbide drill bits and the Mini-Rig hardplate drilling system. I call this tool the Templanator for it is death to all safes it is used on. (See photograph 1.)

I have covered the Mini-Rig in another article, but briefly, it is a small compact hardplate drill rig that attaches to the safe door in one of two ways. The method used for affixing the unit to the door was determined by the safe itself.

If the safe or chest is sheet steel or sheet metal, the two self cutting hard metal sheet metal screws are used to attach the drilling fixture to the door. If the door (or side) of the container is solid steel,

DEVELOPED  
BY STRONG ARM TOOLS,  
I CALL THIS TOOL  
THE TEMPLANATOR  
FOR IT IS DEATH  
TO ALL SAFES IT IS USED ON.



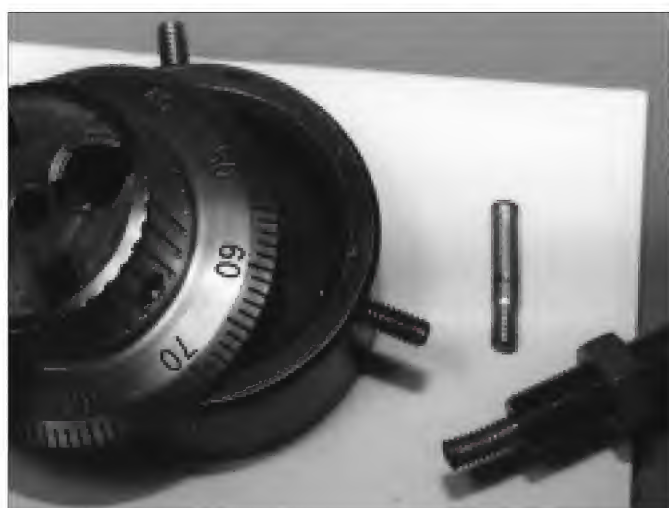
**1. The Templanator kit contains templates, mounting fixture, Allen screws and Allen wrenches.**

then provision is made to drill and tap for a 1/2" hardened bolt. This bolt has a 1/4" hole in the center for drilling.

This system is good, but the repair of the 1/2" hole left something to be desired at times, and placement cannot interfere with the dial ring holes. Also, you have to decide and mount this fixture as you first saw fit.

Now, there is a third way to use the mini-rig tower hardplate drilling apparatus. Strong Arm has introduced two templates and a new improved attaching device. The templates are affixed to the safe or chest door by using the holes for the dial ring.

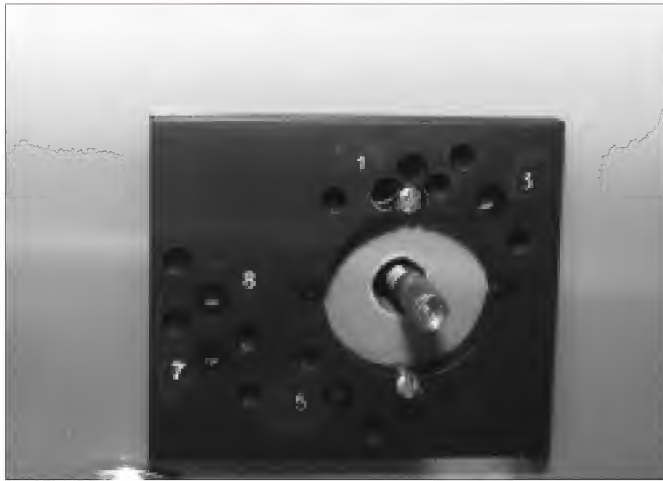
However, before installing the Templanator, the dial and dial ring must be removed. Most dials, like S&G and Mosler cooperate without too much trouble. The LaGard dials, because of how they are made and assembled, cause much pulling problems. I have adapted my Lockmasters dial



**2. Drilled dial with Lockmasters cup and puller shaft with 1/4" bolt installed.**



**3. Drilled dial with three set screws going inside the dial prior to pulling.**



**4. Template attached to safe door using dial ring screws.**



**5. Mounting fixture attached to template.**

puller to accomplish this dilemma quickly and easily.

The difficulty of removing LaGard dials stems from the fact that the spindles are installed from the front of the dial, and the fact that the spindles are tapered outward. This is similar to driving a tapered plug into a safe to seal a drilled hole. This makes pulling the dial with a slam hammer attack useless and trying to pull the dial almost impossible without a few minor modifications.

To do so, first, remove the weight from the standard Lockmasters puller and remove the cap. Put the puller cap on the dial with one of the set screws in line with the "0" mark. Tighten all three 1/4X20" set screws hard enough to leave a mark on the dial. These marks will appear approximately at 0, 33, and 67.

Remove the cap and drill a 1/4"

hole at all three locations and use your first drilled hole with a 1/4" long bar or bolt to keep the dial from moving when drilling the other two holes. Now, pop out the center plastic cap. It is held in place with two plastic 'ears' at 25 and 75. If you cannot pop it out, just pry it off.

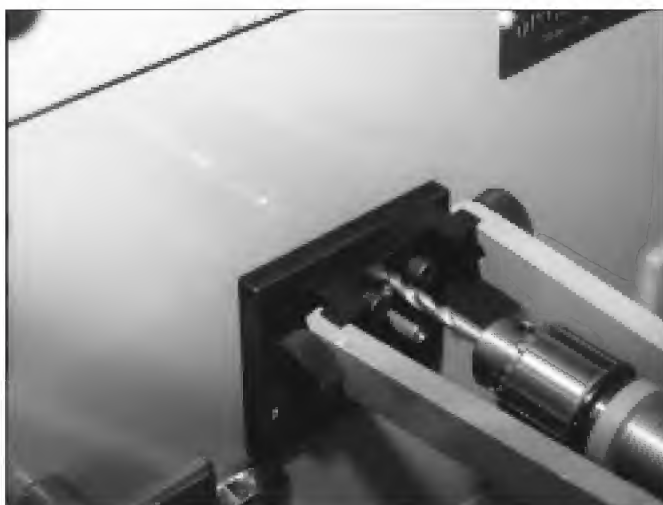
**H**ere is an optional procedure that makes the dial pulling easier, but it is not necessary. Put a 5/16" drill bit in the spindle hole and mark the side where it bottoms out on the dial. Mark 1/2" above this to indicate a 1/2" penetration. Put a long 1/4" bolt or bar in one of the drilled holes in the side of the dial and brace it with your hand or better yet, the handle of the safe.

Now, drill down to the second mark on the side of the drill bit. This now means that you have relieved the end of the tapered spindle about 1/2" and still left enough of the spindle to

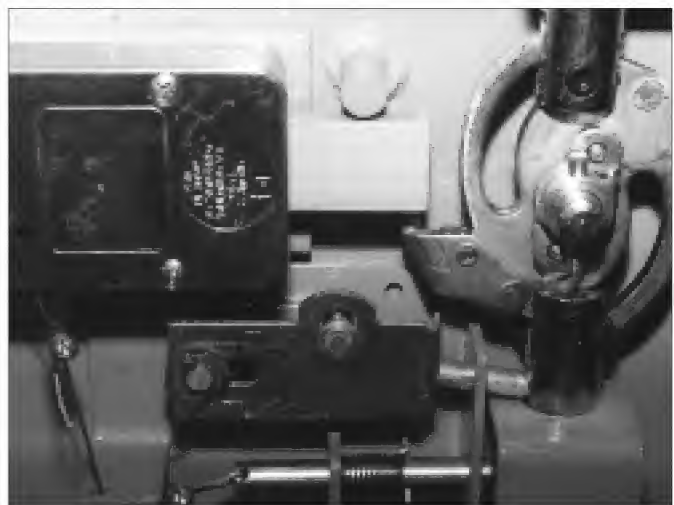
easily turn by hand or with an arrow pointer.

If you decide not to pre-drill to relieve the taper on the spindle, that is OK. It just makes the last few turns of the dial puller harder. Now, reattach the puller cup to the dial using two set screws and one long 1/4"X20 screw, 3" or longer. (See photograph 2.) The screw is to give you leverage to keep the cup from turning when you are pulling the dial.

Next, before inserting a pin into the end of the puller shaft, turn the shaft in the puller cup until it bottoms out. Put a piece of tape on the shaft. This is the maximum distance you can use when pulling the dial. Insert a 1/4" pin or small bolt into the puller shaft and turn it in until resistance is felt. Look at the tape. There will be a 1/4" to 1/2" gap that represents the effective distance you can turn the shaft before it bottoms out.



**6. Mini-Rig attached to template and drilling for end of fence view.**



**7. Inside view of New McGunn safe door with cam lock bolt and relocker bolt position shown.**



**W**hen the shaft has come to the tape, it is time to remove the shaft and put in a slightly longer 1/4" pin. It will take approximately three different pins to pull the dial. Do not shake or pull at an angle, for the spindle will break off at or under the door surface. Slow and steady will get the dial off. (See photograph 3.)

Once the dial and ring have been removed, attach the correct template to the door. There are two templates, and all the holes are numbered and they refer to what you are drilling for. Of course, you must determine the hand of the lock to correctly attach the template. (See photograph 4.)

The two templates in the kit come with attaching fixture, Allen screws and wrenches and an indexing card. These templates cover various S&G locks, Mosler, Diebold, and LaGard combination locks. You can decide to drill for a fence, mounting screw, the relocker, the lever mounting screw, or just a scope hole.

Once the correct template is attached, the mounting fixture it attached to the template with the curved part of the fixture towards the spindle. (See photograph 5.) Then the Mini-Rig is screwed to the template and in a few minutes you are counting your money. (See photograph 6.)

I have used the fence position for drilling with this Templinator tool on safes not equipped with hardplate. The positioning of the hole is so perfect that one sees the edge of the wheels and the edge of the fence. It is so good and easy that free hand drilling is actually harder to do and not nearly as perfect.

The safe used in this article was a McGunn import. Just thought I would throw in a picture of this modified unit. Instead of using a carrying bar, just use an extended bolt on the 3300 unit to block the handle cam. The back of the cam lock bolt and the relocker bolt can also be seen. We'll get a little more in-depth on this popular safe door in another article. (See photograph 7.) Use the "Templanator" and PROSPER !!!!!



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# Decorative HARDWARE



*Logan,  
The Images Collection  
by Baldwin*

**F**rom the ornate palaces of kings and queens to the simple tract homes of suburban America, hardware found on the door is an expression of the occupant, an accent mark that distinguishes and defines that home from others. As such, door hardware for the homeowner becomes the visual centerpiece for each door, a representation of their taste, their household.



*Patina Collection  
by Jado*

*Chadwicke  
by S. Parker Hardware Mfg. Corp.*





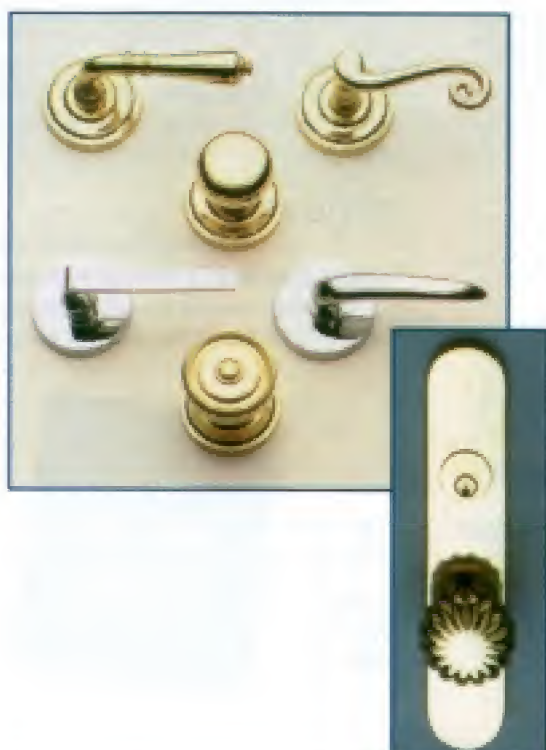


*Titan Lever Line by Kwikset*

For most, the selection is comprised of mass produced yet attractive handlesets, levers, knobs and/or deadbolts. For others, the right hardware requires custom casting and hand finishing. Regardless of the customer's taste or budget, for the locksmith, opportunity means offering the pragmatic - security by way of the sublime - decorative hardware.



*Mediterranean Designer Entrance Handlesets by Schlage*



*Interior Latchsets, Mortise Handle Sets & Mortise Locksets by Omnia Industries, Inc.*



# TECHNITIPS

## Helpful hints from fellow locksmiths

**Send in your  
tips and win.**

### HOW TO ENTER

Simply send in your tip about how to do any aspect of locksmithing. Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Write your tip down and send it to: **Jake Jakubowski**, Technitips Editor, **The National Locksmith**, 1533 Burgundy Parkway, Streamwood, IL 60107 or send your tips via E-mail to the E-mail address posted in the upper right hand corner of this page. Remember, tips submitted to other industry publications will not be eligible. So get busy and send in your tips today. You may win cash or merchandise. At the end of the year, we choose winners for many major prizes. Wouldn't you like to be a prizewinner in 1995? Enter today! It's easier than you think.

### BEST TIP OF THE MONTH

If your tip is chosen as the best tip of the month, you'll win \$50 in cash! Plus, you may win one of the large year end prizes!

### EVERY TIP PUBLISHED WINS

Yes, every tip published wins a prize. If your tip is printed, you'll win \$25 in Locksmith Bucks. You can use these bucks to purchase any books or merchandise from **The National Locksmith**. Plus, every tip published will win a copy of the Technitip Handbook. (Please remember to include your complete mailing address - we cannot mail prizes to P.O. Boxes.)



by  
**Jake Jakubowski**

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- Pro-Lok PK15 Professional Lock Pick Set
- Sieveking Products EZ-Pull GM Wheel Puller
- A-1 Security Mfg. Quickpull
- Major Mfg. HSK Safe Hinge Shim Kit

## Submit your tip and win!

*This month marks my one year anniversary as the editor of this column. I want each and everyone of you to know that it has been a real eye opening experience for me to have worked this column over the last twelve months!*

*During the past year, I have learned a lot, made a bunch of new friends and met people from all areas of our industry that I would not have met if I had not been editor of the Technitips column.*

*However, one of the most important things that I have learned doing this column is: It's your column and without your input every month, I wouldn't have much to write about. So, I want to thank each of you that sent me a tip last year for making my job a lot easier. And .....*

*I want more of you to help me make 1995 the best year of Technitip columns you folks have ever written! Start sending me your tips right now ... Y'all heah?*

*Also, you'll notice that the prize structure and types of prizes have changed this month. Not only for the monthly prizes but, for the year-end prizes as well. There are more, better, and more useful prizes then ever before.*

*By the way, each company, distributor and manufacturer that has contributed these prizes, just like those that have done so in the past, is*

*committed to seeing this industry do well and — they deserve our thanks.*

*So, there's more reason then ever for you to get me your tips. Otherwise, you won't even get close to one of the new prizes we're offering.*

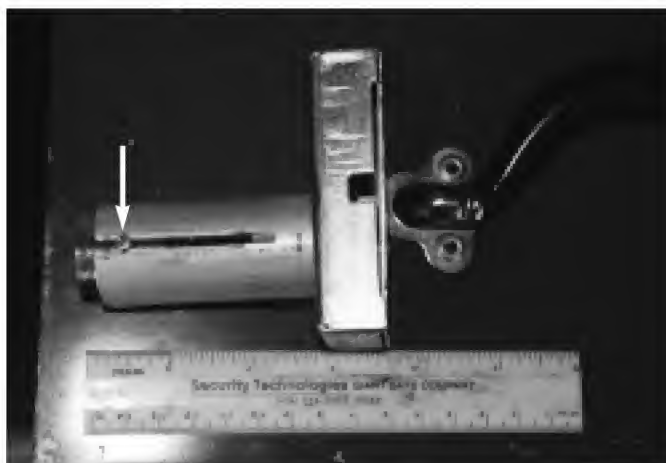
### February's Tip Of The Month Opening Maximum Fire Safe

✉ Here is a tip for opening the key lock on a "Maximum" brand fire safe. The keyway on these safes is kind of small which makes picking difficult. And, if you drill it, you may find the lock hard to replace, not to mention having to make a second trip to the job. So, here's what I consider the easiest way to open these units when the owner has lost their key.

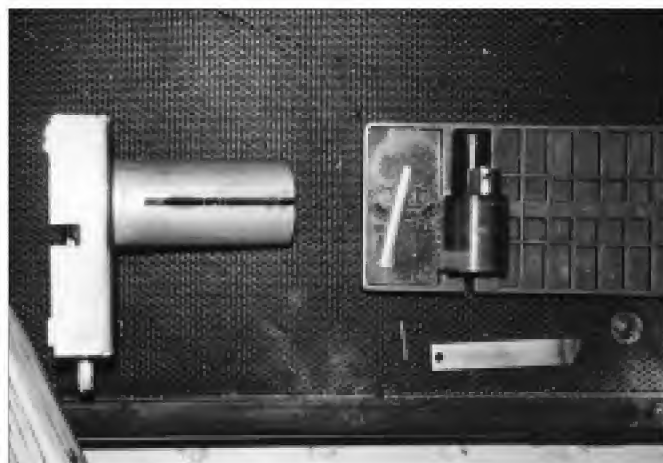
On the front of the safe, there is a chrome escutcheon that screws to the horn of the lock! Simply unscrew the escutcheon and you can look down the right side (3 o'clock position) of the cylinder housing. About 1/4" in from the face of the lock, you can see a set screw This screw is your target! (See photograph 1.)

Remove the set screw anyway that you can. I have found that using a combination of a small chisel to turn the screw like you would a one way screw on a foreign car column and a pair of needle-nosed pliers works best for me.





1. Set screw.



2. Cylinder removed.

Since this lock is a rim-type lock with a straight tailpiece, all you have to do, once you have removed the set screw, is to simply rotate the entire cylinder and the lock will open. (See photograph 2.) You might bend the tail piece slightly, but that can be straightened out easily enough.

With the door open and the cylinder in your hand, all you need is

a V61A key blank (I found the Volvo gas cap key blank works well in this cylinder) and a curved shim. Shim pick the cylinder from the rear, remove the plug, read the pins and cut an operating key for the lock.

Then, reassemble the entire lock, mount it on the door and collect your money from a happy customer.

Todd J. Kern  
California

only have they been hard to work on, but even with Afco tabs, getting everything cut out to accept the bolt or latch face so it would look professionally installed pushed me to my limits.

The other day I encountered a center-seamed door edge and I did not have tabs on my truck. I decided to try and work with what I had and came up with the following tip that I believe will make it easier for my fellow locksmiths the next time they have to work on one of these doors.

The first thing that I did was cut my edge bore hole through the edge of the door. (See illustration 4.) Then, I added the thickness of the doors metal (about 3/16", including the fold of the seam), and added that measurement to my backset measurement (2-3/8") for a total backset from the front edge of the door of 2-9/16".

I marked this on what would be my lock centerline and cut a 2-1/8" crossbore hole. Next, I placed the

#### All-Lock Pinning Kits Winner GM Lock Retainer

Working with a lot of GM door locks, I have found loose, broken or distorted wafer/spring retainer. I have also had to do a call back or two on cylinders that I had serviced where the retainer dislodged from the plug even after staking.

I found a solution to the problem that has eliminated those call backs.

I use a second retainer leg, that I modified and installed alongside of the loose end of the first retainer. To make this second retainer leg work,

grind the leg of the retainer to a knife edge as shown in illustration three. Next insert this modified retainer leg alongside the loose retainer and carefully tap it down as far as it will go. That very effectively wedges the loose retainer in place.

If necessary, I use one of my modified retainer legs on both ends of the first wafer retainer.

Then break off the rest of the retainer flush with the plug. You may have to file or grind the leg down in order to get it even with the top of the plug.

Once you have smoothed the broken edges of the retainer and made sure that they are even with the edge of the plug, insert the key and insert the plug into the cylinder and make sure the plug rotates without binding, or hanging up.

If it does, reassemble the lock and re-install it in the vehicle

Tommy Small  
Idaho

#### HPC Pistol Pick Winner Troublesome Deadbolt Install

I have always had difficulty installing a latch or a deadbolt on a metal door that had a seam running down the center of the door edge. Not

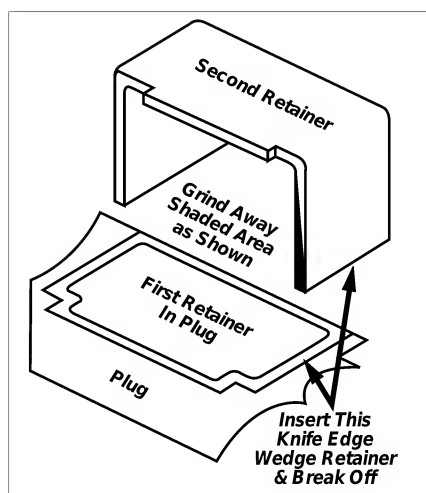


Illustration 3

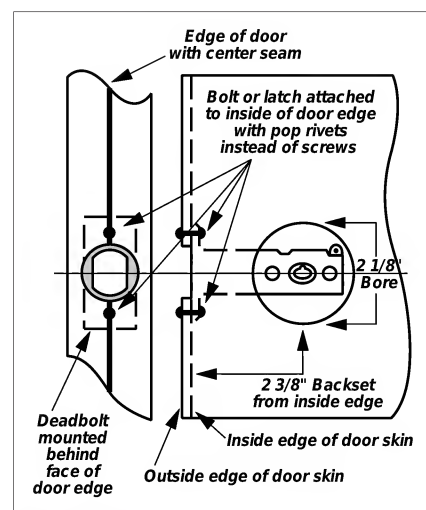


Illustration 4

*Continued from page 80*

lockbolt against the edge of the door and marked the screw holes so I could drill a 3/16" hole for my pop rivets.

Then, I put the bolt inside the door and against the inner edge of the door's skin. When I lined up the screw holes I inserted a pop rivet put a small washer over the inner portion of the rivet and drew the rivet tight with my rivet gun. I did the same thing for the bottom screw hole. Then I mounted the rest of the lock in the normal manner.

What I learned here was a new way of handling a troublesome installation and that the bolt is more secure and

will wobble less when mounted in this manner.

Don Rolachneski  
Virginia

**Silca Rubberhead Key Blanks Winner  
Open 1995 Altima**

I had a call to open a 1995 Nissan Altima. Before I left to do the job, I tried to read up on the opening in my tool opening manual. But, the manual only went to 1994. I figured that the procedure would probably be the same for the '95 model.

I used the recommended tool and tried to catch the bell crank below the lock - that didn't work. Neither did a

"jim" type tool when I tried to pull on the vertical rod. I found out that the linkages were protected when I looked in the door with my inspection light.

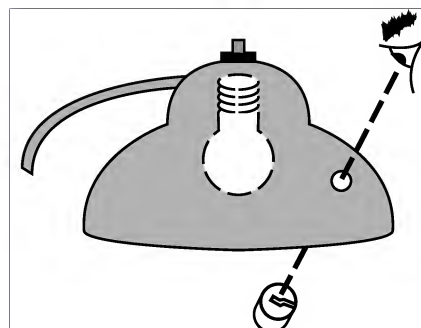
At the same time I noticed that the bottom edge of the window was only about 2" below the weather strip and decided to try to use an under the window tool to open this car.

My under the window tool went right under the window and inside the car without a hitch. I manipulated the lock button and opened the door with ease.

Frank Gonzales  
California

**Pro-Lok Pick Set Winner  
Better Light Source**

Sometimes when I'm working on small parts or locks in my van, I find that it is hard to see into some of the smaller areas that I want to examine. I have a magnifying visor and several magnifying glasses in my truck but still found that I needed something better.



**Illustration 5**

After a bit of thought, I built the "cheater" that you see in illustration five from an old goose neck type lamp that I found in the shop.

I drilled a 1/4" hole as you can see in the illustration and wired the lamp to work off of my van's battery (I had to go down to the motorhome supply place and buy a DC light bulb).

Now when I want to examine something closely, I just turn on my lamp, hold the piece under the hole and look down through the hole. The lamp also doubles as an extra light source over my work area when I need the light.

Hal Butner  
New Jersey

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key machine to 12-volts to operate off my service truck's battery but didn't like the prices when I talked to my supplier.

Figuring that there had to be an economical answer to my problem, I went to the local junk yard and bought a starter off an old Toyota. Which, it turned out had more than enough torque to do the job.

There were two problems: First, the starter turned at too high an rpm. I solved that by using a larger pulley on the key machine. Second, the starter motor turned in the opposite direction than my cutter does. I solved that problem by using a round drive belt and crossing it (like an "X") between the starter pulley and the machine's pulley.

Now, I can duplicate keys without having to find an outlet to plug into every time. So far, I've cut about 300 keys with my new machine.

Charles Shackelford  
Mississippi

#### **A-1 Security Mfg. Quickpull Winner Smoking Key**

Trying to impression Ford and Chrysler locks late at night has been a problem for me. I discovered that if I used the parking lights on my van, the yellow light that they cast helped me clearly identify the marks.

If I have really trying key to impression, I use a magic marker to darken the blade of the key (remember "smoking" blanks?) and the marks really stand out.

Terry Suetter  
Michigan

#### **Major Mfg. HSK Safe Hinge Shim Kit American Padlock Fix**

I was rekeying several American H-11 padlocks for a customer and as I was assembling the last one, I found that I had lost the retaining pin. I did not have a replacement.

After searching for an alternative, I found that the old style (#3) Ford pin would fit. I put the tapered edge toward the screw and the lock works fine.

Shelia Marchek  
Indiana

#### **Stripped Screw Hole Fix**

Many times I have run into the problem where a standard screw for square face latches and strike plates will no longer work because the wood has been stripped out. Often, oversize screws have been used and these have also loosened.

My solution is to use 1-3/4" drywall screws. The heads are small enough not to stick out and the screws are long enough to get a bite in good solid wood. If the door is a composition type, I dip the screw in Elmer's glue before running it into the door with my drill.

Franklin Sykes  
Georgia

#### **Spray Tube Extender**

I have found that occasionally the extension tubes that come with spray lubricants like WD-40 are not long enough to direct the spray where I want it (particularly in car door panels).

I found that if you use a piece of .047" diameter spring rod, you can slide two of these extensions together, use a lighter to heat them until they bond, remove the wire and you have a longer spray extension.

Charlie Schwarzkopf  
Vermont

#### **Jake's Jewels**

As promised last year, here is another installment of Jake's Jewels. These are tips that I received that are not necessarily prize winners but, they make good sense and are worth passing on.

If I use one of your tips in this portion of the column, I won't send you a prize but I'll sure give you the credit for the tip. After all, you wouldn't want my other loyal and faithful readers to think I think these things up all by myself - would you?

**Jeremy Reese**, of Oregon, says that if you are having trouble holding short tailpieces in place on deadbolts, put a dab of Vaseline in the retainer cover. That will hold the tailpiece steady and will not hurt the lock.

**Marsha Willis**, of Tennessee, said that she uses toothpicks to fill in wallowed out screw holes when remounting strike plates, etc.

**John Charmichael**, of Kansas, said that he uses an uncut blank to help start mortise cylinders in narrow stile doors. He said they make a great turning tool.

**Jose Ramos**, of New Mexico, recommends using a touch of light (sewing machine type) oil on long screws - like the ones on Schlage heavy duty strikes - before trying to screw them in a wood door frame.

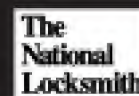
And, finally, **Billy Vetter**, of Rhode Island, said he attached a long string to his strike locator tool to keep from losing it in a hollow metal door.

See ya'll next month!



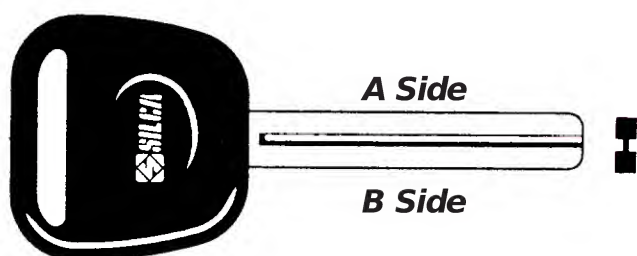
Make Sargent  
& Greenleaf's  
Comptronic  
locks your  
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# KEY CODES

**Millenia**  
**20001 - 21200**



Key Machines:	Silca- HPC- Framon-	Matrix, Club, Club Jr. Laserpoint Sidewinder
Key Guides:	Silca HPC- Framon-	D 708165ZB Not Available Not Available
Cutter:	Silca- HPC- Framon-	F22 CW-LPA-2.5 GHCB093
Tracer:	Silca- HPC- Framon-	T22 Built into machine. GHM S093
Keyblanks:	Silca- Ilco-	Toy40P LXP90-P

Code	A Side	B Side									
20001	33443234	53424544	20038	53442424	22444234	20076	33554224	53222434	20114	54554543	12213334
20002	45542324	13334544	20039	44344224	24442434	20077	54554424	23213444	20115	55344244	21343224
20003	44532323	43235354	20040	55434442	21343244	20078	43443223	24244454	20116	45532244	13135444
20004	32335324	35533244	20041	54553244	13313244	20079	55442323	33242454	20117	45544224	13134234
20005	44233224	42353444	20042	43442224	24443424	20080	32332424	55354324	20118	43442342	24422324
20006	32332324	45435444	20043	42332442	24553244	20081	55442224	13243334	20119	23342442	45324324
20007	23355324	35312324	20044	53445334	32432234	20082	23342342	35313444	20120	55442442	13244234
20008	43442442	44222434	20045	55432324	33345424	20083	54553234	23213534	20121	44233424	43453244
20009	43445424	42422344	20046	42335324	33533224	20084	53443224	33424434	20122	55442432	21344324
20010	44532323	42335354	20047	34432323	44335554	20085	44344532	42242234	20123	43442244	24244234
20011	42332442	43542434	20048	45542323	13222454	20086	23342332	35334454	20124	54233442	13354344
20012	45542234	21324434	20049	33233234	55335534	20087	43442224	24313534	20125	45542442	21323224
20013	53323342	23545444	20050	34432234	34435334	20088	23345324	35423244	20126	42334244	24534434
20014	34423324	42135444	20051	32343234	35334544	20089	54323334	32454344	20127	32334424	45542434
20015	45543323	31224454	20052	54233244	12455424	20090	33532323	53335554	20128	33233244	53535444
20016	23342224	45323534	20053	33542324	53133244	20091	55455424	22133244	20129	54553323	13332454
20017	42332224	44533534	20054	43442224	44313534	20092	53447424	32433444	20130	53443424	13424234
20018	32332244	53533244	20055	44332432	34453244	20093	53442244	23443444	20131	53442224	12434324
20019	42334224	13532434	20056	23323324	55533534	20094	55442442	33243444	20132	55344543	21342324
20020	43445532	24223224	20057	32335342	53532324	20095	54434442	33424324	20133	34432342	34235334
20021	45542323	13313354	20058	23342323	55313554	20096	32334442	53532344	20134	43443324	44424344
20022	55443442	22242234	20059	42332342	33554234	20097	44344332	42443354	20135	45542442	19324324
20023	42332224	23542344	20060	23342334	35424234	20098	42332424	34543244	20136	55332244	33354234
20024	33442442	53422434	20061	23344224	55422434	20099	33554543	53133224	20137	54434442	13423244
20025	23355424	35312344	20062	23342224	35442234	20100	43442223	44313354	20138	32332432	45543244
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20027	42332224	24553334	20064	54233224	12453244	20102	45542224	33133424	20140	32332442	35354344
20028	34454424	44223244	20065	54434424	22423444	20103	44332442	24354324	20141	32332234	35553424
20029	43442244	44423244	20066	54423323	23435554	20104	23343324	35444544	20142	43443224	42442324
20030	32332244	35534234	20067	54332442	23453244	20105	44332342	44343334	20143	13342432	55323244
20031	42332332	24533354	20068	23344244	45343244	20106	54553224	12323534	20144	32332342	53553334
20032	43443234	24242234	20069	33542224	53313334	20107	54553224	32123534	20145	45542223	22313354
20033	43233244	44535424	20070	33544234	53224234	20108	53443224	23433534	20146	44332324	42354234
20034	23342442	55442434	20071	33442244	53243424	20109	43445543	44313334	20147	34432244	42445334
20035	55344323	13242454	20072	33233543	35532324	20110	44344224	42443244	20148	44344234	24224234
20036	43442424	24313444	20073	34433223	43435554	20111	23344224	45324234	20149	45542334	21213534
20037	45532234	22135334	20074	33454224	54213444	20112	33233424	53354434	20150	44542324	42223534
			20075	55332342	31354324	20113	54432324	13445444	20151	54233234	31354544





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20152	23342424	35332234	20211	43442234	24443444	20270	45534442	31224234	20329	32332442	54542434
20153	55432234	13245424	20212	55434424	23343244	20271	45542244	12124324	20330	54233543	12453224
20154	23342244	35313424	20213	23355323	55313354	20272	43442224	24244434	20331	32332244	55335444
20155	43442342	24332234	20214	45533223	32235554	20273	43442424	34324324	20332	33543234	53224544
20156	23354424	55333244	20215	54344224	13424434	20274	54434424	13442434	20333	32332224	55353224
20157	45542233	21323354	20216	33543234	53134234	20275	33233224	35554324	20334	53233234	13553424
20158	53442244	32133224	20217	45532332	12235354	20276	44233424	44354344	20335	54434424	13444324
20159	33442244	54322434	20218	54554424	32212434	20277	42332224	43543444	20336	42334223	24534454
20160	33542432	53134344	20219	44542224	43323534	20278	33432244	54435424	20337	53442424	22424434
20161	43445432	24422344	20220	43233233	24532454	20279	42334342	13533424	20338	33443223	54324454
20162	53233224	33534434	20221	53442323	22423354	20280	45533224	12235424	20339	42332342	24554324
20163	34433223	44335354	20222	55442244	22244344	20281	43442432	42244344	20340	45542442	23122434
20164	32332224	45453534	20223	43442342	44244234	20282	34432334	34435534	20341	32332442	53353424
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20166	44344244	44243224	20225	44332224	34453534	20284	44553223	43213354	20343	53233233	33555354
20167	45542432	32324324	20226	45544224	12124434	20285	23354424	35332434	20344	33423323	54435554
20168	44344244	24423224	20227	45542442	22332434	20286	45542244	33133224	20345	34455342	42133244
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20177	55455324	22313334	20236	42334233	23544454	20295	45544234	13224234	20354	55332324	22354234
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20183	43442234	34324434	20242	42332334	13554234	20301	42332234	33553444	20360	23354424	55332434
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20185	54344323	32434454	20244	23344224	35442434	20303	34423323	34435554	20362	55423324	31245424
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20196	54332244	12454234	20255	55455442	22132344	20314	45542323	13132454	20373	54233424	32454434
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20199	54432342	32435444	20258	45545532	13223224	20317	45532244	21235424	20376	43442244	24424344
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20201	55442424	31243444	20260	45542334	12213534	20319	33233244	54453244	20378	45542424	13223444
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20204	54233224	32454234	20263	55332324	33353244	20322	45544332	33224454	20381	53442224	32433244
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20206	43442424	42424344	20265	55455334	12213224	20324	54554424	21322234	20383	33423323	54235554
20207	33442234	53424234	20266	43443334	34324544	20325	43233442	24554434	20384	44542442	42333244
20208	44332244	42135334	20267	55455424	32323244	20326	45532229	21235334	20385	44344324	42244234
20209	33442324	54212434	20268	23354244	55312434	20327	45544223	31334454	20386	53443244	33424234
20210	23342244	55424434	20269	23343224	35423334	20328	43443543	24422234	20387	32332332	55535354



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20388	45542324	21324344	20447	55443244	31243424	20506	45544224	22134234	20565	45534442	32324234
20389	45542224	31334344	20448	33553244	53313424	20507	53443224	23433244	20566	44544224	43324234
20390	53442224	13442344	20449	54553424	23213224	20508	32332422	35354434	20567	44542324	42133444
20391	23345532	35422324	20450	23344342	35334324	20509	53443543	13423334	20568	34455324	24222344
20392	55443224	22244434	20451	32332234	35533424	20510	55455424	13222344	20569	42332332	43544454
20393	33553324	53132324	20452	42332424	33553424	20511	32332233	53532454	20570	54433234	23435534
20394	55455324	13222324	20453	33442342	54213334	20512	45542324	31223534	20571	23344224	45432434
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20396	45542224	12123534	20455	45532334	22135534	20514	42332234	13533444	20573	34433244	34435444
20397	43442244	24313244	20456	54344224	22442344	20515	45542324	13313534	20574	54433244	32435424
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20404	55344543	31243334	20463	33233234	35353244	20522	45544223	21324454	20581	45542442	31332234
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20409	45532342	13335444	20468	44533224	42335334	20527	33443234	53242434	20586	23342442	35442324
20410	33233224	35535334	20469	44332244	24353334	20528	45544244	13224434	20587	55344543	22243334
20411	43442224	24334544	20470	34454532	34213334	20529	45542424	32124434	20588	44344223	24424454
20412	45532323	23235354	20471	42332432	34542434	20530	42332244	24533444	20589	33233224	53533444
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20414	55434442	33243244	20473	43442334	42444344	20532	55442224	21343334	20591	45542244	13133424
20415	45542324	12123244	20474	54344543	32432324	20533	53445532	22423224	20592	45543334	32124544
20416	32334233	35534454	20475	42334543	43543334	20534	45542432	12232434	20593	55344224	13243424
20417	32334442	35532344	20476	33233224	53555424	20535	23344532	53242324	20594	45542244	31222434
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20419	54233424	13354234	20478	44542234	43213534	20537	54554233	32213354	20596	45544224	13334324
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20421	43443442	24424324	20480	54554442	31313424	20539	42334244	24533244	20598	45542224	31312234
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20423	33532224	53335334	20482	54233424	31354434	20541	23354234	35332324	20600	45542323	31313354
20424	45533244	12235444	20483	33233244	45435334	20542	45543224	32124344	20601	53323323	23543354
20425	43442432	44422434	20484	45542244	12213444	20543	54554244	31333244	20602	42332244	33532324
20426	54553233	13223554	20485	53323342	33555424	20544	23344543	35423224	20603	54432324	22445424
20427	55433224	21345424	20486	32334424	55443244	20545	32332342	53353224	20604	44332224	44353224
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20430	33455424	54233244	20489	43442424	42442344	20548	53233244	13535444	20607	55423323	12235554
20431	33233424	53554344	20490	42335324	24533224	20549	45542224	22313534	20608	54554224	31313334
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20436	43442244	24243444	20495	44233424	24353224	20554	44442244	42442234	20613	55344234	22242344
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20438	45542334	33224544	20497	42332323	44535354	20556	45533224	23235334	20615	55434424	21342344
20439	42334432	33534234	20498	34455342	42313244	20557	54323334	12455334	20616	45545543	22133224
20440	44344323	24443354	20499	33542442	53224344	20558	54233244	13353244	20617	44553224	43233534
20441	45542244	23232434	20500	54434442	13443334	20559	54344224	32434434	20618	23344543	35443334
20442	55332234	33353424	20501	54434442	22443224	20560	44344244	24224434	20619	45543234	23324544
20443	55442442	31244324	20502	34453244	34212434	20561	44344224	44224334	20620	44543424	42224344
20444	34423332	43235554	20503	42334432	13534324	20562	32332323	55335354	20621	32332234	35554234
20445	44323342	24354344	20504	55433224	13245334	20563	45542442	13313444	20622	43443324	24224324
20446	33432342	54435444	20505	54344233	32432454	20564	23342442	35424344	20623	54233224	31355424





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20624	54233234	13355424	20683	44344223	44224454	20742	44344224	24422434	20801	23354224	55313334
20625	55434432	22242324	20684	44553244	42313444	20743	54233224	12454324	20802	54554442	21323244
20626	23342244	35444234	20685	33233224	55335334	20744	54233224	22354324	20803	34453224	34233534
20627	32332244	35533444	20686	45542424	13224344	20745	32332224	53553224	20804	54433244	22445444
20628	33443224	54343534	20687	54233224	31354344	20746	42332422	43544434	20805	43442432	24242324
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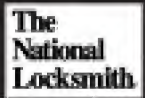
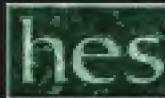


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## TAMING TROUBLESOME EXIT DEVICES

*Exit devices are a part of the locksmith's life.*

*Learning a few of the problems and their solutions can make the job easier and faster.*

by Steve Gebbia

**T**roubleshooting exit devices can be a difficult process. A thorough understanding of how the device is intended to work is essential. Although the construction of exit devices can vary greatly from manufacturer to manufacturer, the basic operating principles remain the same. The parts may be different and they may be connected differently, but they all provide the same basic function. A skilled technician can often use knowledge gained from servicing one product to help him service another manufacturer's device.

One word of advice: Just because the device has been on the door for months (or even years) does not mean that it was installed correctly. Keep this in mind and be prepared to remount the device if necessary. An example of this is shown in photograph one. This is a pair of steel doors with VonDuprin 8827 vertical rod panic exit devices. Ever since the doors were installed in 1992, the left door would not latch properly. If you examine the photo carefully, you will see that the top latch on the left door was installed 1/8" too low on the door. Because of this, the trip lever would not contact the strike plate and the door would not relatch. The solution was to place a 1/8" thick shim under the strike plate. Now the door latches every time.

### General Problems

Because of the complexity of exit devices, there are several areas where problems can develop.

The most preventable problem involves the dogging assembly. The dogging assembly holds the device in the depressed position for free passage from either side. Proper operation requires that the crossbar or touchbar is held depressed while dogging and undogging the device. This will relieve pressure and allow the dogging assembly to release properly. This is especially important with touchbar devices. Failure to do so will cause excessive wear to the dogging lever. The device will no longer be able to be dogged down and the dogging assembly will need to be replaced.

Crossbar devices use a different type of dogging mechanism. In each lock case there is a dogging screw with a tapered end that screws into an opening in the case casting. It is important to always dog both sides of a crossbar device. Too often only one case is dogged down (usually the active case). This will cause the opening in the case to oval out and eventually the crossbar can no longer be held fully depressed. The only solution is to replace the entire lock case - a rather expensive repair which could easily be avoided.

Because the spring power for a crossbar device is in the hinge case, the lever arms and crossbar must act as one unit. The screws that hold the crossbar to the lever arms must remain tight. Since these have a tendency to work themselves loose, thread locking compound is a good idea.

As with any lock, from time to time you may need to adjust the strike plate. Most devices have strike plates with slotted screw holes for adjustment. Make sure that the latch can extend fully and that the strike mounting screws hold firmly.

### Device-Specific Problems

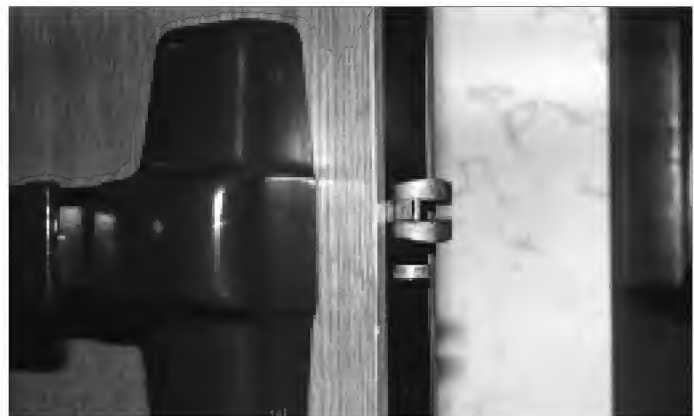
Due to their construction, certain locks have recurring problems. The same is true of exit devices. These are not necessarily defects in the device, but merely weaker links that show the abuse of day-to-day operation. Remember that many of these units are exposed to high levels of both traffic and abuse.

### Rim Devices

Probably the most common problem with rim devices is cylinder alignment. If the key starts to turn smoothly then binds through part of its turn, chances are the cylinder is not aligned properly. Both the horizontal and vertical centerlines of the tailpiece must align with the cam

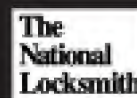
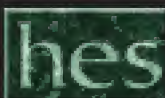


**1. Having been used for a long time doesn't mean the device was installed correctly. The latch on the left was installed 1/8" too low to operate correctly.**



**2. Mortise exit devices are generally very sturdy, and except for standard maintenance usually require very little repair.**





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**3. The bolt on the left is not fully extended and needs adjustment.**

in the active case of the device. If the tailpiece is not absolutely straight, it will bind as the key is turned.

The length of the tailpiece is also important. If it is too long, it will bind against the internal parts of the active case and prevent the latch from extending fully. The tailpiece should be just long enough to fully engage the drive cam, but should not extend past the cam into the lock case.

#### **Mortise Devices**

Mortise devices are extremely heavy duty and generally hold up to extremes in traffic and abuse. (See photograph 2.) An occasional strike adjustment or repair of vandalism is all that is likely to be needed.

#### **Vertical Rod Devices**

##### **Surface Mount**

These provide some of the most involved repairs of any exit device. The most common problem is adjustment of the vertical rods, top and bottom latch units. This can be a whole lot of fun! Since this can be an involved process, look to next month's issue for more an in-depth discussion on adjusting these devices. In photograph three, the top latch on the left door does not extend fully. The top rod needs to be adjusted.

Correct strike alignment, particularly of the top latch, is important for proper operation of vertical rod devices. When the crossbar (or touchbar) is depressed, the top rod is pushed upward. This draws the top latch into its case where it is help depressed. As the door closes, a trip lever located in the top

latch case hits the strike plate and allows the top latch to release. If the trip lever is not activated by the strike plate, the latch will not extend and the door will not lock.

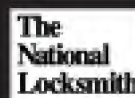
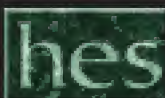
As the top rod moves upward, the lower rod is also pulled up. It is held in this position by the hold-back assembly in the top latch case. If the top latch does not stay retracted, the bottom rod will not remain held in the up position. This will cause the bottom rod to hit the threshold and prevent the door from closing. The solution is to adjust the vertical rods at the top case to allow proper hold back

If the rods move sluggishly, check to make sure that they are not bent and are not binding on the rod guides. Periodic cleaning of both the top and bottom latch cases will also allow smoother operation of the vertical rods.

While examining the rods, check for small cracks where the push block mounts to the rod. It is important that this connection remain tight since the rod must both push and pull the latch mechanism. If the rod is cracked, the push block will fit loosely and will not operate the latch properly. The best solution is to replace the entire rod. Keep in mind that the top rod and the bottom rod are different lengths. Also, if the door is more than 7' tall, you will need a longer top rod or an extension rod.

##### **Concealed Mount**

Concealed mount vertical rod devices are much easier to service than surface mount devices. The most common application for these is glass



doors. (See photograph 4.) Because of the construction of these units, the top latch generally does not allow or require adjustment. The most common problem with these devices is found in the active case. The cylinder tailpiece connects to a pinion gear that moves a retractor gear. The retractor then moves a traveler assembly that raises the rods within the door. Since the pinion gear is the weakest link, it has a tendency to break a tooth or two. These parts are fairly inexpensive - keep a few on hand if you plan to service these devices.

Occasionally, you may find that the lower rod does not retract fully. In this case, it must then be adjusted inward. Remove the door and lay it on its hinge side. At the bottom of the door is a guide for the bolt. Remove this and you can then screw the bolt inward. With the door still on its side, depress the crossbar and check to be sure the bolt withdraws above the bottom surface of the door. When the bolt is retracted it should be just above the lower edge of the door. Replace the bolt guide and rehang the door.

Concealed rod devices are sometimes found on steel or wood doors. The top latch on these units is similar to those on surface vertical rod devices. The most common problem here is adjustment of the vertical rods. If the unit latches properly at the top but not at the bottom, the lower rod must be adjusted. If the door does not release when the crossbar is

depressed, the top rod is the culprit. This will be explained in greater detail next month.

One major cause of problems with concealed rod devices is dirt in the threshold strike. If these are not kept free of dirt and dust, the rods will not extend fully.

#### Fire Exit Devices

Fire exit devices have some rather unique features. Most importantly, there will never be a dogging assembly on a fire rated device. These units are intended for use on fire doors and must relatch every time the door closes. Another unique feature found on some fire rated vertical rod devices is a soffit latch. This latch is mounted in the top of the door frame and is released by a bolt attached to the end of the top rod.

The most important thing to remember is to always use replacement parts designed for fire rated devices. Although they may appear to be the same, parts intended for panic devices are not as durable and should never be used on a fire rated device.

Fire rated exit devices are some of the heaviest duty hardware available. They often operate without any problems for many years. Periodic cleaning and lubrication is recommended for longer life and smoother operation.

While servicing exit devices may seem to be a long and difficult task, basic troubleshooting skills and some specialized knowledge are all that is required. An excellent source for information is manufacturer's parts catalogs. Here you will often find exploded view diagrams which will help you tremendously.

Take your time and think about how the device is intended to operate. Once you understand this, the rest is simple.



4. Common concealed vertical rod devices.



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# CLOSERS UNDER FOOT

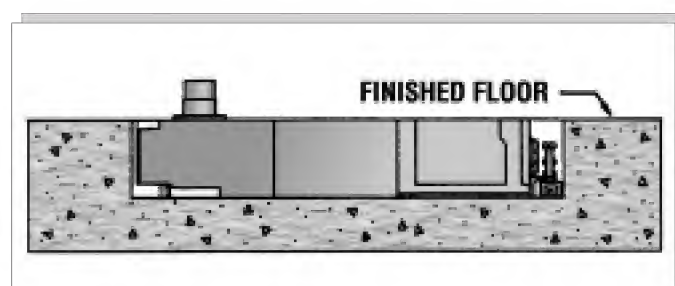
**While not for everybody, the floor closer can be installed by any locksmith with mechanical aptitude.**

by Lynn Eisenhauer

**C**oncealed floor closers offer a number of special advantages that make them the closer of choice in certain applications.

Concealed floor closers are generally acknowledged to be the workhorses of the closer world. They will control the most difficult doors, including unusually large or heavy doors that might prove too much for overhead concealed closers. They are also the closer of choice in worst-case situations like high drafts and other more extreme conditions.

Like the overhead concealed closers discussed in last month's issue of *The National Locksmith*, floor closers are virtually invisible, and are often specified in design-intensive installations for aesthetic reasons.



**1. Side view of a typical thin slab floor closer installed.**

Floor closers are available for many applications, including all types of wood and hollow metal doors. They are equally useful on aluminum doors carrying a heavy glass load.

Despite their versatility and workhorse reputation, there is a tendency to shy away from concealed closers. While both initial cost and installation cost are higher than those of surface applied or overhead concealed closers, long term dependability and durability make them an excellent overall value.

## Typical Applications

Typical applications include center hung, double or single acting 3/4" offset or 1-1/2" offset single acting pivot. Independent hung applications are also an option. However, these require a slide arm assembly to compensate for the difference in pivot points between the door and closer spindle. While doors can be hung independently on hinges or pivots, it is always preferable to have the weight of the door

sitting on the closer so that the closer acts as the pivot point of the door.

## A Word About Retrofits

When replacing an existing floor closer, the easiest solution will be to use the same brand and model for an exact retrofit. In cases of product obsolescence or repeated product failure, however, it may make more sense in the long term to discard the existing product and replace it with a newer, more efficient closer.

When replacing an obsolete floor closer, existing top or intermediate pivots can be re-used if they are in good condition. However, the bottom arm will need to be replaced and the bottom of the door re-machined to accept the arm for the new closer. In addition, the old closer and existing



**2. Install bottom arm to door.**

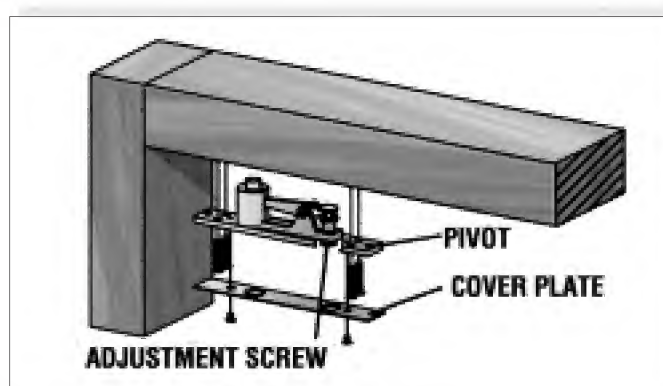
cement case will need to be removed.

The case can be chiseled out by hand (hard work!) or with a small electric chisel, which is well worth the cost of rental. To determine if this will be necessary, compare length, width and depth of the current closer case with new closer requirements.

Most manufacturers now supply thin-slab style floor closers as opposed to earlier models, which often had significantly greater depth. The new generation of closers offer equal strength and serviceability yet are more compact in keeping with modern thin-slab construction practices.

Thin slab closers also offer adjustment within the case. The ability to make end-to-end, side-to-side and leveling adjustments is helpful in compensating for inaccuracies in installation and for fine tuning to achieve a plumb and level door.

When making your hole comparison for the new closer requirements, always allow 1" minimum around the perimeter of the cement case for



**3. Install the top pivot into the frame.**

*Continued from page 104*

installation of a grouting cement. Added depth can easily be filled with sand which allows flexibility in moving and adjusting the new closer for plumb and level before re-grouting. When re-grouting, always use high-strength, high quality grout cement. Epoxy-based concrete patch mixture is often a good choice.

#### **Typical Installations: New Construction**

We will address the basic procedures involved with installation of a floor closer in a center hung aluminum storefront entrance. Like the overhead concealed closer discussed last month, installation of the floor closer is part of the process of hanging the door.

Locksmiths who tackle this project should plan accordingly. Two people will be needed to safely and efficiently complete the installation. Also note that the grouting compound used to anchor the cement case must have sufficient time to harden. Plan to install the cement case at least one day prior to hanging the door.

New installations normally use the shallow-depth floor closers discussed above. (See *illustration 1.*) The door and frame are specially prepared to accommodate the closers and pivots specified for the opening. The installation must begin with a thorough survey of the opening to be certain that it is dimensionally correct and plumb, level and square. The area intended for the floor closer should have been blocked out before the concrete pour. Check the block out for accuracy. If there is a problem, it's back to the chisel.

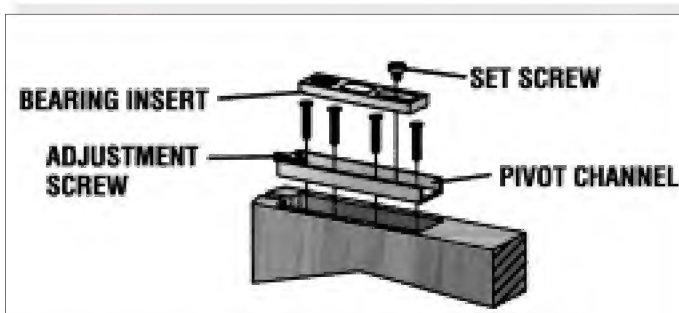
#### **Step One**

The installation itself starts with accurately locating the cement case. If the closer is adjustable within the case, center it in the middle of the case to allow adjustment in all directions. If the block out is deeper than required, use sand to raise the case to the proper height.

Locate the cement case and closer spindle center line according to the manufacturer's instructions. The top edge of the cement case will typically be flush with the finished floor line. If you are working with a terrazzo floor or marble/ tile overlay, you will need a

terrazzo pan that sits on top of the closer. The pan is a removable mounting surface which accommodates a piece of the flooring material, completely concealing the closer. The closer should never be permanently concealed as that will make maintenance, repair or servicing virtually impossible.

In center hung applications such as this, the spindle is normally placed 2-3/4" from the pivot edge of the frame.



**4. Then install the door portion of the top pivot.**

The closer is centered in the middle of the frame depth.

#### **Step Two**

After measuring (twice) and checking to ensure the cement case is plumb and level, mix the grout cement

and grout around the perimeter. Accuracy and tidiness here will help avoid a great deal of grief at a later point; many poor or problem installations are due to carelessness at this step. Examine the frame prep for the top (walking beam) pivot. To assure it is correct, compare it to the manufacturer's installation instructions. Also check the top and bottom door preps to assure that they are correct. Manufacturers typically supply doors with specific web depth dimensions for top and bottom door preps. Shims may be required to ensure accurate installations.

#### **Step Three**

Install the bottom arm according to the manufacturer's instructions. (See *illustration 2.*) Closer arm assemblies for aluminum doors often include lateral jack screws on the bottom arm which should be backed out

against the bottom door rail for additional rigidity after the arm is secured.

#### **Step Four**

The top pivot can now be installed.



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First, install the walking-beam portion into the frame head. (See *illustration 3.*) Retract the pivot pin by turning the screw located in the face of the frame portion. Turning this screw moves the beam of the pivot, "walking" the pivot up into the frame.

Then install the cover plate over the walking beam. Many red-faced installers have stood back to admire an otherwise perfect installation only to find that the door must be removed to install the forgotten cover plate.

It is a good idea to apply an anti-seize compound on the critical walking beam working parts. This will make future pin retraction and door removal easier, if required.

Now install the door portion into the top door rail. (See *illustration 4.*) This part of the pivot often consists of two parts to permit adjustment of the door after installation.

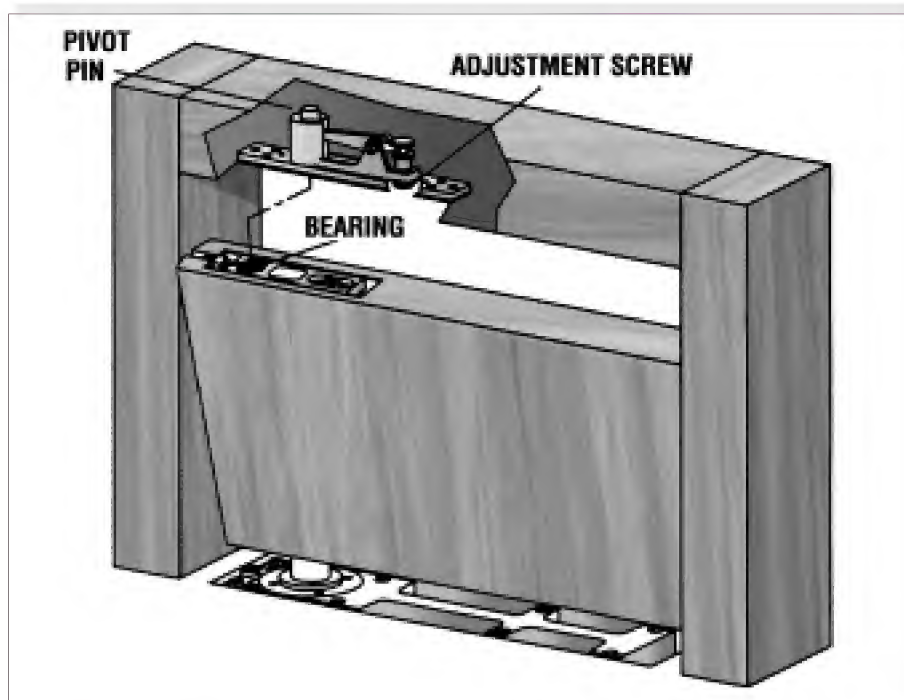
#### Step Five

Prepare to hang the door. This part of the installation typically requires two people. First, install the closer spindle into the closer body. Most thin slab style closers have interchangeable spindle capabilities, with the spindle height selected on the basis of designed bottom-door clearance. A 3/4" undercut is typical, but many other heights are available for varying conditions. As actual on-site conditions vary, it is best to check to determine if different spindles will be required prior to attempting to hang the door.

If the opening will use a threshold, this is the time to install it. Use a three-piece threshold that allows removal of the small section over the closer body, permitting closer access without complete removal of threshold and door. Where a threshold is not used, you will need to install a cover plate (normally supplied with the closer).

To hang the door, tilt it upright to an almost completely vertical position. (See *illustration 5.*) Lift it and place the bottom arm onto the spindle. Continue tilting the door upright until it is practically vertical. Make certain to keep the socket in the bottom arm engaged to the spindle.

Once the bottom arm has slipped on to the closer spindle, rotate the door 90° for easy access to the walking beam pivot screw. Align the walking beam pin with the bearing in the top of the door portion. Turn the



**5. Install the door.**

screw in the walking beam to cantilever the pin into the bearing. The door is now hung and rotating. Allow it to close and check clearances.

Remember that door clearance can be fine tuned by making

minor final adjustments in the closer within the cement case or in the top door portion.

After correcting clearances, securely tighten all fasteners and  
**Continued on page 116**

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# THRU THE KEYHOLE



## A Peek at Movers & Shakers in the Industry

**ATTENTION MANUFACTURERS AND DISTRIBUTORS:** Would you like your company and products to be profiled in *Thru The Keyhole*? Please call Managing Editor, Tom Seroogy at (708) 837-2044.

### Acme Technical Support & Inventory

For the past 26 years, Acme Security has been intimately involved in developing the physical and electronic security industry. While continually monitoring changes in the industry, Acme Security has also assisted manufacturers in product design and development. Because of

their "hands on" approach to the security industry, and the cumulative 99 years experience, Acme has gained the technical knowledge needed to solve any application the locksmith may incur. Acme is prepared to assist with any application from entry level lock, electric strike and keyless entry, to high end card access, closed circuit television, and alarm integration.

Acme's commitment to the security professional is not only in technical support, but also in inventory. They carry an extensive inventory from over 60 manufacturers, that allows them to provide same day shipping for most orders place by 4 p.m. PST. Acme offers electric strikes from Adams Rite, Eff Eff, Folger Adam, Rofu, and Von Duprin, and a full range of magnetic locks from Securitron, Security Door Controls, Locknetics Security Engineering. They also have a broad line of panic hardware, both electrified and non-electrified, from Adams Rite, Alarm Lock, Arrow, Detex, DCI, Securitron, Security Door Controls, Von Duprin, and a line of electric locks from, ACSI, Alarm Lock, Best, Folger Adam, Omni, Schlage, Security Door Controls, and Von Duprin.

Because Acme feels that offering just the major components does not provide the level of service their customers deserve, they also offer many hard to find, and often over looked items including emergency break glass, or pull stations, for door releases, power transfer hinges, pneumatic switches, weldable gate boxes, foot treadles, hole plugs, power transfers, key switches, exit switches, request to exit motion sensors, and many more.

For those security professionals involved in keyless entry, and card access, Acme offers the full product lines from Essex, IEI, Locknetics, MRL/Crypto, Omnilock, and Securitron. For high end access control, dealer programs are available




using American Magnetics. CCTV products offered include Burle, Pelco, Sony, Vicon, Videolarm, Ikegami. Intercoms and video intercoms are available from Aiphone and Maxon. For the Do-it-yourselfer's, and retail sales, Acme also offers CCTV/Intercom package systems from Totevision.

To assist the locksmith and his customers with compliance of the Americans with Disabilities Act, (ADA), Acme is pleased to announce that they now stock the full line of Dor-O-Matic Jr. and Sr. Swings, and the Norton Powermatics automated door operators. In this fast growing facet of access control and ADA required barrier removal, Acme Security is prepared to support the locksmith in every way.

For assistance, call Acme Security at 800-348-ACME (800-348-2263), or FAX 510-483-4500.

### Levers For Locksmiths By Lindustries, Inc.

Fifteen years ago, Lindustries, Inc., specialists in construction fasteners, was asked by a hardware distributor to develop a universal doorknob lever adapter. The anticipated Americans With Disabilities Act could mean millions of functioning knobsets would be sacrificed for new lever sets. The cost to do this was viewed with open hostility by building owners and facility managers where hundreds of doors could be counted in one building. There had to be another way



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*Continued from page 110*

to meet ADA requirements in existing buildings and a lever adapter seemed appropriate at least from a cost standpoint. If one, indeed, could be developed.

The hitch was that locksmiths and facilities people were very clear about what such an adapter should do. It should fit all standard knobs regardless of size or shape, completely cover or encapsulate the knob, install without knob removal, have no visible means of fastening, address the temperature limits of the ANSI/UL 10B Fire Hose Stream Test, minimize force transferred to the knobset's mechanism never designed for lever action, ...and above all, sell for a fraction the cost of new lever sets and their installation.

During the course of Leveron's development, Lindustries learned that doorknob lever handle technology went back to 1883. Scores of devices have been invented since then, but none showed the ability to grab the knob firmly, yet minimize the stress to the knobset shaft assembly. Claws, clamps and set screws could not solve the problem by themselves. Another step had to be taken...resiliency!

Leveron's latest polymer provides resiliency not available in metal. Its grab gaskets supply additional stress yield and new gasket approaches are continually being researched. The most recent step in this direction is Maxi-Grip, which has been gradually introduced during the past year.

Maxi-Grip enables the installer to use Leveron's handle for tightening, instead of the wrench method alone. The washer gasket is simply stretched over the knob onto the knob neck and the split-ring rejoined behind it with wrenches in place. Leveron's handle can be then used to tighten the main assembly onto the split-ring while holding the wrenches stationary. A small self-tapping screw is provided to fasten the split-ring to Leveron's sidewall to prevent any chance of loosening with no damage to the knob.

This approach provides the locksmith or installer better control over how tight he wants Leveron to be particularly on commercial grade hardware exposed to heavy traffic. Assembly time is about three minutes per knob when instructions are followed. Clearly, Maxi-Grip has opened Leveron's market to schools,



public buildings and private facilities which comply with ADA. Locksmiths should not miss this opportunity to increase their income by providing customers with a minimum cost alternative for addressing ADA that might otherwise be lost under the act's provision for "undue burden" to the building owner who can't afford to replace existing hardware.

Further information is available from Lindustries, Inc. and the company welcomes input from locksmiths and anyone in the hardware business.

For information contact Lindustries, Inc. P.O. Box 66295, Auburndale, MA 02166-0003, phone 617-237-8177.



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# BITS & PIECES

## Informative Tidbits for the Security Industry

by Tom Seroogy, Managing Editor

All-Lock just released news of changes in the 1995 Saturn. Made mid-year, it is unknown at this time exactly what vehicles this change affects.

While the door locks seemed to have side stepped any major revamping, the real news lies in the ignition lock cylinder. While appearing similar to its immediate predecessor, the new lock now incorporates all seven tumblers of the Saturn key system.

A new lug found on the pawl or tailpiece of the plug also necessitates minor changes in the service procedure. In the older version, once the plastic bezel and pin plug retainer were removed, the plug simply slid out of the cylinder. In the 1995 not only must the bezel and pin retainer be removed, but the plug must also be

turned to align the lug with a broaching in the cylinder. The All-Lock part number for this new ignition cylinder is 1359.

While the keyway is identical, the tip of the key has been extended by approximately 1/16" or .0625" over the previous Saturn keyblank. A key number was not available at the time of this writing. Because this key is gauged from the tip, all spacing, depth and cutting specifications seem to be identical to the older system.

Tumbler placement for the 1995 Saturn is as follows: Ignition - 1 through 7; Door - 2 through 6; Trunk - 3 through 7.

In the May 1994 Bits & Pieces column we informed you General Motors had released a service bulletin concerning door panel problems with

1993 and 1994 Camaros and Firebirds. According to the bulletin, the fiberglass door and panels, bonded at the seams, are splitting or separating at the latch edge of the door. The splitting is caused from improper bonding during manufacturing.

It seems that this problem has not only not gone away, but has proliferated. According to Tom Mazzone, technical writer and GM Master Technician, these vehicles are being brought in for repairs in an ever increasing number.

While under normal conditions this repair is covered under warranty, a dealer may decline the warranty if the door has previously been worked on. Previous work can include wedging the door during an opening or disassembly to repair or replace a

*Continued on bottom of next page*

# INDUSTRY MEETINGS

## February 14-16, 1995

International Security Conference & Exposition  
Anaheim, California  
Call (800) 388-8821 for more info.  
See *The National Locksmith Show Guide* for map and booth listings.

## March 8-12, 1995

Texas Locksmiths Association  
Annual Convention  
Arlington Marriott and Convention Center, Arlington, TX  
Contact: Nancy Viaille  
(806) 795-7117.

## March 12, 1995

Southern Lock and Supply Co.'s annual "Buyers Trade Show"  
St. Petersburg Hilton,  
downtown St. Petersburg, FL  
Contact: Celeste Orr (800) 282-2837.

## March 17-19, 1995

Hardware Sales and Supply of  
Livonia, Michigan's Sixth Annual Trade Show

Troy Marriott, Troy, Michigan  
Contact: Carolyn Crawford  
(313) 591-1150, Ext. 229.

## March 18, 1995

LADC 38th Annual Awards banquet  
Holiday Inn - Calverton: 4095 Powder Mill Road, Beltsville, MD  
Contact: Banquet Chairman Les S. Brodsky (202) 722-0900.

## March 18 & 19, 1995

Greater Chicago Locksmiths Association  
10th Annual Midwest Trade Show  
Olympia Plaza Hotel, 4141 Calumet Ave., Hammond, Indiana  
Contact: Kathy Zaniolo  
(708) 386-3334.

## March 30-April 2, 1995

Master Locksmiths Association of New Jersey convention  
Contact: Master Locksmiths Association of New Jersey, P.O. Box 2441, Morristown, New Jersey 07962-2441.

## April 6-9, 1995

Armstrong's Lock & Supply 17th Annual Educational Conference & Security Show  
Atlanta, GA  
Contact: Mark Miller (800) 726-3332.

## April 19-23, 1995

American Lock & Supply's 23rd Annual Security Show and Educational Conference  
Disneyland Hotel, Anaheim, CA  
Call American Lock & Supply  
(800) 844-8545, Ext. 293.

## October 6-8, 1995

1995 MINK Convention and Trade Show  
Omaha, NE  
Contact: Keith Delano  
(308) 345-6174

Send your organization's press release of meetings or events to *The National Locksmith*, 1533 Burgundy Parkway, Streamwood, Illinois 60107.  
Attn: Industry Meetings Page



# SHOP TALK

## Helpful questions and answers

*Shop Talk* answers readers questions on any locksmith related topic. Only letters judged to be of general interest will be published. We regret that we cannot answer individual letters. Because of the volume of mail, only those questions answered in the magazine will receive answers. Send your questions to *Shop Talk*, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107.

**Q:** I have an ignition code for a Chevrolet, but am unable to locate it in any of my code books. It is stamped on the outside housing. The code number is D39JO. Can you help me with the cuts and keyblanks?

Merlin Tyler  
Mississippi

**A:** I doubt you're going to find that code, Merlin. Unless there's a misprint, D39JO is not a Chevrolet nor a GM code. The number you saw may be a part number or a badly stamped code number, which allows me to raise an issue regarding codes and code series.

Every week I receive calls from locksmiths looking for codes they cannot find. Of those calls, over half are numbers that are not codes at all. They may be part numbers, or Julian date codes or some other stamping not related to the key bitting. This is common, especially from those new to the trade, or those working in areas to which they are not accustomed (i.e. automotive, etc.).

The unfortunate aspect of this problem, is that by the time he realizes that the number he has is not a code, an inordinate amount of time and money has been wasted. This is especially true of file cabinet and auto codes.

For most locks, outside automotive, it is important to know not only the number on the lock, but the manufacturer of the lock and the manufacturer and model number of the file cabinet being worked on. All the information provided can help determine the correct code. Hon file cabinets, for example, predominantly use Hudson locks; Steelcase uses Chicago, etc.

## BITS & PIECES

*Continued from previous page*

door lock, latch or handle.

This, of course, can put the locksmith in a precarious situation should a customer suffer this problem after work has been done on the door. To cover yourself, it is recommended that the customer be informed of this problem before any work is done to the vehicle and a thorough inspection of the door and its edges or seams is made both before and after the work has been completed. When performing the work, be careful not to apply stress to door panels. And, when wedging the door during an opening, place the wedge as close to the center of the door as possible.

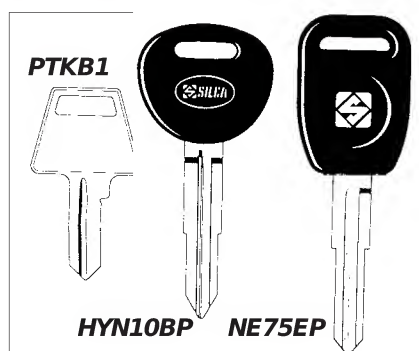
Well, this year seems to be the year for new and improved locks. Just released is Schlage's new Grade 1 heavy duty, commercial deadbolts - the B600, B700 and B800.

All three series meet ANSI 156.5-1992 Grade 1 and U.L. listed Fire Rated Auxiliary Lock requirements. The 800 series also meets U.L. 437 high security standards.

The 600 series comes with a 6 pin cylinder keyed 5. The 700 and 800 series come with Schlage's Primus key and cylinders (the 800 series includes the drill resistant U.L. 437 listed Primus cylinder). The 600 and 700 are available with Schlage's IC core.

Keep your eyes open for a future review of this new deadbolt.

Silca is introducing three new keys; the PTKB1 an American Lock look



alike, the HYN10(BP) for the new 1995 Hyundai Accent, and the NE75EP for the 1995 Rover.



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Automotive, on the other hand, is a much easier game to play. There are several excellent reference manuals to help you determine whether a number is a code. Baxter has a Foreign Car Information Manual, as does Ilco. Silca has an excellent manual called Automotive, Truck & Motorcycle Keyblank Identification And Cross Reference Guide. It includes the year, make and model of most vehicles we work on. Then gives the code series and keyblanks used for those models during those years.

In fact, with the information these manuals offer a locksmith will know what code series he is looking for even before he has a lock in hand or starts working on a vehicle. With this, he knows that any numbers not matching the one found in the manual is probably a part or casting number.

I guess the whole point here is that there is plenty of material available, a lot of it free, that can help the locksmith do his job easier, faster and less expensive. Let's work smart not hard!

**Q** : In the June 1994 issue of The National Locksmith, Steve Gebbia wrote an article on electric strike installation. In it he mentioned a tool called a plasma cutter. I have a job to install 65 electric strikes in metal frames and am very interested. Could you please send me information on where I can possibly purchase one of these units?

Richard Peterkin  
New York

**A** : Congratulations on such a large job, Richard, I'm sure a plasma cutter is just what you need. From what I'm told these units can make clean cuts through metal doors and frames as fast as you can move the cutter.

Finding one won't be that hard, either. I took the opportunity to speak with Greg Ceebin of the Linco company in Elk Grove, Illinois, a welding supply shop. He said that there are a few companies out there that make plasma cutters, the top three being Thermal Dynamics,

Hyper Therm, and L-TEC. The size you need will depend on the thickness and type of material you're cutting.

Along with that cutter you'll need some compressed air, apparently this is what does the cutting. According to Greg, specialty metals such as stainless steel can also be cut cleanly by the plasma cutter but requires the use of NO (nitrous oxide) instead of regular compressed air.

Greg says that these units are available through most welding supply shops and cost range from \$1200 to \$2000 depending on the bells and whistles you want with the unit. Greg also recommends that you not purchase a unit until you've had opportunity to see a demonstration. He says most welding supply shops are more than willing to show you how they work and let you give a hand at trying one.

Good luck!



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## THE LIGHTER SIDE

*Continued from page 62*

can't afford to pay? Seems I remember several grateful customers who fell in those categories and have bent over backwards to bring you home-baked goodies and write glowing letters to the editor praising your 'Good Samaritanism'."


"You're beginning to sound like the ghost of Christmas past," Don muttered. "All right, all right. Your point is well taken."

Don stood quietly for a moment, jingling the change in his pockets. A suppressed smile flirted with the corners of his mouth.

"But I do think we need to keep in mind Ted's favorite saying," he said.

"And what is that?" I asked, always a hit skeptical when I see that look on his face.

"Ted says, whenever you're tempted to do something nice for someone, you should remember that no good deed goes unpunished."

(Some days, I had to admit, it almost seems that way!) 

## CLOSERS UNDER FOOT

*Continued from page 109*

adjust the operation of the closer.

### Step Seven

Omission of sealing compound is a common oversight and a leading cause of premature closer failure. The sealing compound is typically a two-part chemical compound that is poured into the case filling the spaces between the closer body and the walls of the case and preventing the case from acting as a bucket for retention of rain, ice or snow.

The chemicals are mixed together to form a compound that is poured in to completely surround and cover the closer body. The compound cures to a consistency of gelatin. It is easily removed by peeling or cutting with a knife or screwdriver if required.

Follow the manufacturer's instructions for adjustment procedures for proper door control. Install the cover plate or remaining threshold segment on the exterior door. If the installation involves an exterior door, caulk the outside edge for additional protection from water seepage.

## Conclusion

While floor closer installation is more involved than installations involving surface-applied or overhead concealed closers, the job is in the realm of any locksmith with good mechanical aptitude. The secret is to take your time, follow instructions and do an accurate installation the first time.

*Lynn Eisenhower is manager, marketing communications, for DORMA Door Controls, Inc., Reamstown, Pa, and its recently acquired subsidiary, American Device Manufacturing Corp., Steeleville, Ill. Eisenhower has been with DORMA for more than 14 years. His responsibilities include extensive technical training for sales representative and customers.*



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# TEST DRIVE



**Taking Industry Products for a Spin Around the Block**

## THE ORIGINAL DOOR STOPPER BY JWT

**PRODUCT:** The Original Door Stopper by JWT Corporation, 16506 Westgrove, Dallas Texas, 75248. Phone 214-416-7174 or FAX 214-416-6102. Three painted finishes are available, Chrome, White and powdered Brass. Locksmith cost is \$5.25 for the chrome and white finishes, and \$6.50 for the brass. The Suggested Retail Price is \$15. (See photograph below.)

**PRODUCT DESCRIPTION:** The Original Door Stopper is an accessory lock developed to comply with the Texas Property Code, section D, requiring that apartments and other multi-unit complexes have keyless locking devices installed. This unit is installed on the door frame and locks or blocks the door from the inside without the need or use of keys. Access to the lock from outside the door is not possible.

The unit is made up of a slotted strike plate that is attached to the door frame via three 4" screws, an interior plate that engages with the strike plate when the door is locked, and a wall hook and ball chain for storing the

interior plate when the door is not locked.

**FRIENDLINESS:** As an effective door lock, The Original Door Stopper by JWT couldn't be easier to install. Outside of attaching a ball chain and wall hook for storing the lock's interior plate, fastening the strike to the frame with the screws is the only installation necessary. The only exception is on tight fitting doors that may need mortising.

**FEATURES:** In simplest terms, the functioning part of this lock is made of two stamped heavy gauge sheet metal pieces and three 4" screws. The slotted strike plate is a small flat piece of metal with three mounting holes and a "T" shaped tab on one end for engaging the interior plate. The 4" screws provided, hold the strike to the frame, and are long enough to make deep and substantial penetration of the door's framework.

The interior plate is a 4" diameter pressed and stamped metal plate. A cutout at the center of the plate is used to engage the tab on the slotted strike when in the locked position.

One of the most noticeable features of this lock is its strength. In a report by Southwestern

Laboratories, and supplied to us by JWT, testing under the ASTM E-8 Standard Test Methods of Tension Testing of Metallic Materials showed a total load of 1,105 pounds was applied before The Original Door Stopper failed.

As a comparison, JWT supplied the results of the same test as applied to a well known 1" deadbolt. Test results on the deadbolt show a failure at only 420 pounds.

**COMMENTS AND SUGGESTIONS:** After installing and reviewing this lock, only a few observations really need mentioning.

First, it should be noted that the strength tests were performed on the locks and not to the door and frame area. Even an excellent lock cannot adequately prevent entry where substandard doors and frames are present.

Second, if the door has metal frames and/or wall studs, JWT can provide 3" self tapping sheet metal screws with the order of the lock.

Finally, as an only complaint, despite the simplicity of the lock and its installation, the instructions are way over-written. While the parts list and installation (including illustrations) take up approximately one page of space, caution notices, in red ink, take up the better portion of yet another page; much of which is redundant.

Despite our rather litigious society, this may be overkill.

**CONCLUSION:** It should be noted here that the rather verbose nature of the instructions in no way detracts from the attractive income potential of this lock. It can be installed in just a few minutes and costs less than \$10. Yet, it offers customers a high degree of security. The income potential of this unit during add-on sales at a job-site or displaying it for sale at the shop makes this device a worthwhile investment.

